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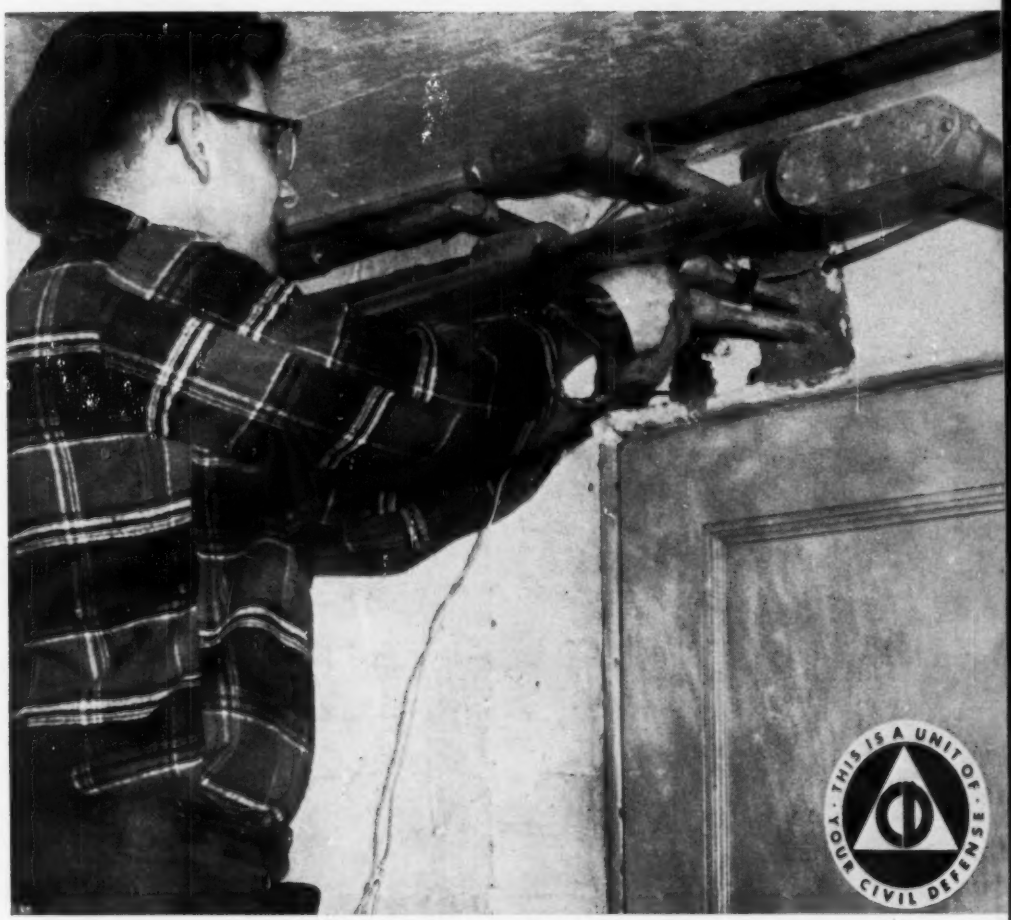
Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



General Telephone Co. of Upstate New York employe makes plant addition prior to Civil Defense test of communication system requiring telephone line facilities. General took facility into premises of 50 subscribers and terminated line on conventional terminal block. For full story see page 18.

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FLASHES AND PLUGS

GO TO THE TOP? No one can accuse Ivan Cabanne, secretary general of the French Postal ministry, of favoritism in the allocation of telephones.

Monsieur Cabanne, according to a Dec. 5 report, recently moved into a tiny office while the ministry is being redesigned. The temporary quarters contain only a desk for himself and one for his secretary.

He lacks one basic necessity however—a telephone. The titular boss of 300,000 telephone employes and mail carriers hadn't as of the Dec. 5 report, been able to get one.

•

REPENT BY TELEPHONE. In Denver, Colo. recently, Mrs. Martha Koorstad reported a burglary of the one-in-a-million outcome variety. She said a burglar had entered her home through an unlocked door, ransacked a dresser, and taken a metal box containing papers and $315.

On Monday morning, she received a telephone call from a man, apologizing for the burglary. He told her if she would look in locker 169 at the bus station she would find her stolen belongings.

Mrs. Koorstad telephoned police, who checked the locker, and found all her stolen property safe there.

•

PINKIES ARE TIRED, FACES ARE RED. A subscriber these days, when DDD is so widespread, may not realize the behind-scenes role played by telephone operators. There are dialers, here and there, however, who bewail the loss of "the voice with a smile". Of course, she's right there ready to assist, but—

One complainant in Milwaukee, Wis., recently voiced his sentiments to this effect:

"We used to be able to blame our wrong numbers on 'the voice with a smile'; now we have to blame ourselves, recognizing that most of the (wrong numbers) are due to digital or mental fatigue, dialing, for example, the code for San Francisco (415), instead of the code for Syracuse (315)."

•

SURE EATS INTO THE PROFITS. John T. McQuown, editor of "Pennsylvania General News", house organ for General Telephone Co. of Pennsylvania, sent us this item from the "News". Most subscribers sincerely want to pay their bill, but now and then certain naturally (or unnaturally) occurring phenomena delay payment.

James Witprachtiger, customer representative in General's Windber exchange, recently received the following letter from such a bedeviled customer:

"This bill or the bill before it was not overlooked. We have a large dog who does not like mailmen, and he sometimes chews up the mail before we can get it from the box.

"This happens quite frequently, so we usually wait and see just what pieces of mail are missing and catch up on anything later.

"Sorry this happened again."

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

December 23, 1961

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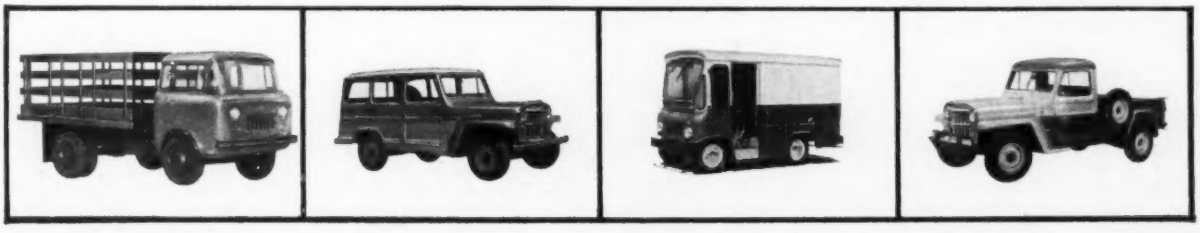

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
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NASC, headed by Vice President, urges President and Congress to take space communications planning away from FCC . . . Sees liberal element pushing for outright government ownership . . . Bitter fight to protect private ownership assured. Stevenson proposes UN space program. Telephone to play vital part in administration's CD radioactive and shelter plan.

AS WE HAVE previously indicated, it appears likely that the President may take the role of space communications planning away from the FCC by recommending wing-clipping legislation to Congress. The National Aeronautics and Space Council (NASC), headed by Vice President Johnson, has recommended that President Kennedy and the Congress take the responsibility away from FCC for regulating space communications.

NASC also said the President should ask Congress to broaden ownership of the system to a variety of U. S. and foreign interests and abandon the approach recommended by FCC which would limit the network's ownership to 10 international U. S. cable and radio companies. The FCC plan has come under fire from some quarters because of the fear that telephone interests would dominate future space communications developments.

Obviously, the government can dictate to industry the kind of private enterprise combine that will use space for commercial communications because, for one thing, the government owns all launching and tracking facilities. The fact that FCC regulates existing cable and radio communications companies is strong precedent for such regulation.

Earlier President Kennedy announced a policy which would see the space network owned by private interests rather than the government, but he did so on the recommendation of NASC which seems to have reversed its field. In addition to the FCC plan which calls for 10 international carriers, another proposal has been advanced in which private industry would own the system and would allow all comers—including the general public—to buy shares in a corporation that would own the satellite system. Another plan would have the 10 international carriers share ownership with domestic telephone companies and space exploration equipment makers.

The Kennedy Administration is now expected to submit the profit-making, publicly-owned corporation plan to Congress during the next session. A bitter fight can be expected in both houses. The issue will be whether ownership should be restricted to international companies, or broadened to include the general public. Of course, there will be a liberal element pushing for outright government ownership. Assistant U. S. Attorney General Nicholas Katzenbach recently stated that the communications satellites, whether they are publicly or privately owned, will be controlled by the federal government and that they will undergo greater government control than do transoceanic cables. He's probably right because of the industry's dependence on the government for the space launching hardware and because of the international propaganda potential inherent in such a system.

Meanwhile, the National Aeronautics and Space Administration (NASA) is proceeding with its plans for launching the satellites. It announced recently that Brazil will provide a ground station for satellite communications experiments scheduled for next year. France, West Germany, and Great Britain are already lined up to participate in the experiment, and Italy has indicated that she will furnish a ground station for later experiments. NASA has stated that AT&T will own two to four of the satellites and that Radio Corp. of America will build another which will be owned by NASA. NASA also plans to launch a high altitude satellite which is being developed by the Hughes Aircraft Co.

UN Space Program

Adlai Stevenson, U. S. Ambassador to the United Nations, urged the international body to adopt a broad program for international cooperation in the exploration of outer space. He proposed that Nigeria and Chad, two newcomers to the UN, be added to the 24-nation committee to which such a program would be entrusted.

The Russian delegate, Valerian A. Zorin, agreed to study the proposal but stated that his country would insist on the troika principle. In typical Russian logic, he criticized the United States for the UN's failure to reach agreement on a cooperative space program.

The Russian delegate insisted that the USSR and the USA must have a veto power on any international agreement in this field since they are the most advanced nations in the field.

In his speech, Stevenson said, "There is a right way and a wrong way to get on with the business of space exploration. In our judgment, the wrong way is to allow the march of science to become a runaway race into the unknown. The right way is to make it an orderly, peaceful, cooperative and constructive forward march under the aegis of the United Nations."

Stevenson introduced a resolution, which was cosponsored by Canada, Italy and Australia, proposing the following guidelines:

(1) That the principles of international law be applied to outer space and celestial bodies to insure that they are not subject to appropriation by claim of sovereignty.

(2) That the United Nations be made a clearing house for all information on outer space activities, including launchings of satellites, and cooperation for peaceful use of outer space.

(3) That special emphasis be placed on advancing man's ability to understand the basic physical forces affecting climate and the possibility of large scale weather modification.

(4) That steps be taken through the international telecommunications union and similar bodies to pave the way for establishment of a world-wide communications system utilizing earth satellites.

There are important ramifications for the space satellite communications program in the Stevenson speech. The controversy currently brewing over government *vs.* private ownership of the system might eventually escalate into a squabble about international or even UN ownership.

Plots Civil Defense Course

The increased intensity of the world situation and the extensive press coverage of radioactive fallout and fallout shelters have stimulated a vital new interest in the field of civil defense. For several years, the civil defense people in government were more or less tolerated as necessary, but not too important.

Now the situation has changed as the public and the staff men and women of other government agencies clamor to these defense planners for answers to a wide variety of questions. They have answers to some questions, but not to all. Many of their answers are admitted to be educated guesses. There are so many unknown quantities in the entire defense picture that no one can state with much certainty exactly what should be done. One recalls the gas masks which were issued as a precautionary measure in World War II. Obviously, there will be even more change between the next war if one comes and World War II than there was between World War I and World War II.

It goes without saying that regardless of what defense measures are found to be necessary, telephone companies will of necessity play a very vital role in the defense posture.

Clifton W. Phalen, president of the New York Telephone Co., recently addressed the annual meeting of the Life Insurance Association and outlined the company's defense plans, as well as broader peacetime use of the telephone.

Mr. Phalen cited three examples of what his company is going to do in an effort to guard against possible attack. Circuits have been built around, instead of through, major target areas, and he pointed to the coast-to-coast underground coaxial cable network

REA Approves Four Telephone Loans

The Rural Electrification Administration has approved the following loans:

Florida Central Telephone Co., 218 East Park Ave., Tallahassee; $1,319,000; Nov. 9.

Proceeds from this loan will be used to help furnish initial service to 1,682 subscribers and to improve service for 458 subscribers.

This new REA borrower is a subsidiary of the Southeastern Telephone Co. and has no existing properties. It plans to acquire from the Cherry Lake Utilities Corp. the telephone facilities serving in and around Cherry Lake. It also proposes to acquire from the Southeastern Telephone Co. telephone properties serving in rural regions of its service area. Included are dial central offices at Ponce de Leon and Freeport. The latter acquisition will be consummated by the issuance of common stock of the borrower to the Southeastern company.

The two acquired dial offices will be retained in place with the dial facilities expanded. A new dial office will replace the Cherry Lake central office equipment; new exchanges will be created and new dial central offices constructed at Baker, Glendale and Lee.

E. M. Menendez is both president and manager of the Florida Central company.

•

Etex Telephone Cooperative, Gilmer, Tex.; $733,000; Nov. 9.

These funds will aid in furnishing initial service to 1,241 subscribers in the service area, installing facilities to provide a higher grade of service for existing subscribers, constructing new commercial headquarters facilities outside the city limits of Gilmer and completing the authorized system. Facilities required to serve the additional subscribers will include expanded central office equipment.

REA loans to this borrower will help it to furnish new and improved service to 3,452 subscribers. The six exchanges of the system now furnish dial service to approximately 1,725 subscribers.

•

The Monrovia (Ind.) Telephone Corp. (Mailing address: P.O. Box 116, Tipton); $526,000; Nov. 16.

This loan will assist the company to improve service for 637 subscribers and to furnish initial service to 719 subscribers. This new borrower of REA loan funds now furnishes dial service in and around Monrovia.

The borrower will use these funds to enlarge the dial equipment in its central office. The facilities provided in this loan will enable subscribers to call Danville, Indianapolis, Martinsville, Mooresville, Plainfield and West Newton without toll charge. A portion of these loan funds will be used to refinance the borrower's existing indebtedness.

James W. Yager is president and William H. Smith is manager of the Monrovia corporation.

•

Vernon Telephone Cooperative, Viroqua, Wis. $617,000; Nov. 29.

Proceeds will be used to help improve service for 1,045 subscribers and to furnish initial service to 188 new subscribers. The borrower plans to acquire the facilities of the Westby Telephone Co. Most of the acquired plant will be retired.

The cooperative plans to construct a new combination commercial and central office building at Westby. At present it serves 1,045 subscribers through seven exchanges, four of which have been cut over to dial operation.

When all construction has been completed, the borrower will be serving 3,678 subscribers.

under construction. He also said a 21-story, fallout-proof building with 12-inch reinforced concrete walls and no windows is being built in lower Manhattan to contain emergency supplies for at least two weeks' operation without relief.

The Kennedy Administration has been scored by many people for not providing the leadership needed to allay the mass confusion about fallout and fallout shelters.

On Dec. 13, the administration proposed a 700 million dollar civil defense program which includes federal incentive payments as a stimulant to the construction of community fallout shelters in schools, hospitals and welfare institutions. The civil defense budget for 1962 is 207 million dollars.

Deputy Defense Secretary Roswell L. Gilpatric, who announced the plan, told reporters that the proposal will be included in the defense program for the next fiscal year. President Kennedy is expected to elaborate on the plans in his budget message next January.

The administration hopes that approximately 20 million community shelters will be constructed during the fiscal year which begins next July 1. The incentive bonuses will be retroactive to Jan. 1 so communities will have no reason to delay their construction plans.

Guesstimates about the federal contribution place the figure at about 500 million dollars, based on a sharing of the costs with local and state governments. The remainder of the budget would finance warning, radioactive monitoring programs, training and public information activities.

The federal government had proposed that telephone companies be recruited to handle at least part of the monitoring of fallout, but the idea met with very cool reception from both Independent telephone companies and the Bell System. Understandably so. There is an awesome responsiiblity attached to the job, and telephone companies are going to have their hands full in any emergency without taking on any collateral duties in which they are not expert.

All-in-all, the new government pronouncement is a cautious and common sense approach to the problem. It acknowledges that, regardless of the shelter program, casualties in a nuclear war will be staggering. With the barrage of advertising claims from an army of get-rich-quick shelter promoters, to which the public has been exposed, the present plan looks like a sound step in the right direction, although there will obviously be disagreement between experts with conflicting viewpoints.

Broadcasters Fight Back at FCC

As we have reported in this department on various occasions, there has been a heated battle between FCC Chairman Newton Minow and the broadcasting industry since his series of speeches lambasting the television industry for the poor quality of its programs. He called it a "vast wasteland." Few intelligent people who have spent any time at all before a television set would have much argument with Chairman Minow's condemnation of TV's juvenile output. But they might draw the line at endorsing broader government control to insure a better caliber of programming. Not many television viewers would want to substitute the taste of some government bureaucrat for the taste of the present television producers and directors.

Recently the television industry turned its big guns on Minow and his FCC. Frank Stanton, president of the Columbia Broadcasting System, and Robert W. Sarnoff, board chairman of the National Broadcasting System, strummed the same chord in separate speeches on the same day. Although they denied later that there was any collusion on their part, most observers thought they recognized in the two-pronged attack the start of an all-out campaign to muster opposition to increased federal involvement in broadcasting.

Both NBC and CBS are being called before an FCC hearing next month to explain network policies and practices.

In his Benjamin Franklin Lecture at the University of Pennsylvania, Stanton said, "I don't know of any satisfactory or democratic alternative to letting the people set the standards of programming by the simple act of accepting or rejecting what is offered." He alluded to Minow's earlier statement that he reached his conclusions about television by sitting in front of his TV set watching programs until the station signed off the air.

"The danger of this kind of sensationalized and oversimplified approach with its broad brush conclusions is not only that it grotesquely distorts the situation as it is—a clear perception of what is necessary to improvement—but also it invites impulsive measures directed at making fundamental changes on the ground that any change is a change for the better," he said.

He continued, "Actually, the only change that I have seen suggested is that the government supervise programming by use of its licensing power and by regulating a major program source, the networks." Stanton warned that if the government adopted such supervision it would lead to authoritative standards that would stifle creativity.

Sarnoff, addressing a group of NBC affiliates in Beverly Hills, Cal., said much the same thing. He avoided mentioning Minow by name, but said, "When criticism comes, pointedly and suggestively, from the voice of governmental authority, speaking softly but carrying a big hint, at what point does criticism become coercion? Where does freedom leave off and interference begin?"

Later he said, "Even if the government could force programs to its prescription, it could not force the public to watch the prescribed programs." He said NBC agrees with the government's aims, but disagrees with the means the government proposes to employ in order to achieve them.

The broadcasters are not without friends on the FCC itself. In a speech before the Colorado Radio and Television Executives in Denver the same night as the Stanton-Sarnoff salvos, FCC Commissioner Rosel H. Hyde indicated that he does not agree with Chairman Minow's views about regulation. He said the broadcasting industry "must be an unimpeded and unsubservient communications service."

He told the broadcasters, "The challenge is to improve and to make more effective use of the presently available unsubservient, democratic system. The means are at your disposal. The instrument, of course, is improved programming."

It's very nice to say that the quality of television should be improved, but we think a great many Americans would be quite disturbed if they lost their westerns and "cops-and-robbers" programs.

Advertisers, in the final analysis, are going to determine what is shown. And perhaps this is just as it should be. The man who pays the piper has the right to call the tune. Many television advertisers have been very pleasantly surprised to learn that good programming is also good business. Many more of them ought to learn the lesson.

We tend to sympathize with FCC Chairman Minow, even though we don't agree with his "big-brother-is-watching" approach. He's a young man in a hurry trying to do his job the best way he knows how, and he's forced to defend himself on two flanks: From the broadcasters and from the National Aeronautics and Space Council.

To steal a scene from the westerns Mr. Minow deplores, it seems like they're trying to shoot him out of the saddle before he reaches the pass.

GREAT NEED TODAY

Realism in Economic Life

By F. R. KAPPEL*

F. R. KAPPEL

Industry needs the freedom to commit itself, unleash all its energies, to act with confidence and daring. Government should get with private enterprise and give it the room to drive ahead.

SOME TIME ago, the suggestion was made that I talk a bit about space communications. I'll be glad to do so, but if you don't mind I shall take only part of the time for that, and then go on to some other matters.

A few weeks from now, I understand, Newton Minow, chairman of the Federal Communications Commission, will be talking to you gentlemen about the future of communications. No one could feel more strongly than I do that this is a fascinating subject, but I doubt that you would want two full-size helpings in three weeks' time.

On the other hand, I can't resist the opportunity for a few words about my favorite business, and I'll begin by saying simply that we in the Bell System count you Californians as among our very best customers. To give you an idea of how much we want to serve you, let me mention just two figures.

$1.7 Billion Growth

Ten or more years ago, at the end of 1950, Pacific Telephone had invested about a billion dollars in the facilities it uses to provide service here in California. This was after nearly 75 years of telephone development. In the ensuing decade, from 1950 through 1960, the company increased this investment by another 1.7 billion dollars. So the total California investment now approaches 3 billion dollars and is still going strong.

After all the growth you have had out here, what seems most certain is that you are destined to have much more. Our job is to meet our full responsibility in providing the communications you need.

Now about space communications. Here again, growth in human needs is the key concern—the driving reason for establishing, as soon as possible, a workable world-wide satellite system.

Overseas Calls Increasing

Overseas telephone conversations, for example, have been increasing about 20 per cent a year. At that rate the volume doubles in four years and increases six times over in 10. So we shall need a very large increase in overseas communications channels. The question is, what is the best way to get them?

On land, coaxial cables and microwave radio relay systems provide long distance channels by the thousand, and the time is coming when hollow pipes called "waveguides" will provide hundreds of thousands. Across the oceans, we are building more cable systems; but we can't build towers on the water to relay microwaves, and the concept of sea-going waveguide pipes presents technical problems that seem insuperable, at least for many years to come.

However, it now appears that satellites could be used, in effect, as towers in space, to relay microwave signals overseas and thereby transmit voice, data, and TV. This method promises to provide more channels faster, and probably more economically, than if we put our entire effort into building ocean cables of greater and greater capacity. In any event, for regular commercial communications, a satellite system would be nothing other than an extension of the overland systems in this and other countries.

Private Enterprise Leads

What we are trying to do, you see, is simply to develop and use the best means for meeting a service responsibility that keeps on growing. If we did not do so, we would fail in our duty. This is why our Bell laboratories scientists have been making, over a period of years, the pioneering and really intense technical effort required to achieve high-quality, dependable communications by way of satellites. And, I must confess, I am tremendously proud that from our enterprise have come so many of the transistors and solar cells, traveling-wave electron tubes that will last for years, and the antennas, receiving systems, and "maser" amplifiers that make noise-free space communication possible at all.

Now, where do matters stand today?

First, communications satellites are being prepared for experiment in the

*Mr. Kappel is Chairman of the Board of American Telephone & Telegraph Co. This is an address he gave before the recent meeting of The Commonwealth Club of San Francisco, Cal.

near future. The pressing need is to test them in the space environment. As part of this program, under a contract between National Aeronautics and Space Administration (NASA) and the AT&T company, the first of the satellites now being developed at Bell laboratories is scheduled for launching in the spring. Others will follow. Thus 1962 will be a critical year in the testing effort.

Approaching Critical Stage

Second, the country is also approaching the critical stage in determining how a commercially operable satellite system can best be organized and conducted. Of course, in a world-wide system, ownership of only a portion—probably less than one-half—would be held in the United States. President Kennedy last summer issued a policy statement favoring private ownership of the United States' portion, under public regulation. At the same time he laid down certain basic requirements, including equitable use of the system; effective competition in its construction; and a proper structure of ownership and control.

Following the President's statement, the FCC directed a committee of representatives of the international carriers to come up with a plan, and a month and a half ago the committee made its recommendations. In my judgment these recommendations are sound. What is proposed is essentially this:

A non-profit corporation would be created to act for the United States communications companies to develop, manage, and promote the use of communications satellites. Each carrier authorized by the FCC to provide services via satellites would be allowed to be a joint owner of the satellites, and each owner would have two directors in the satellite corporation. Thus, if Company A should invest 50 million dollars in the satellites, and Company B 500 thousand dollars, each could designate two directors. Also, there would be three public directors appointed by the President, and another director who would represent carriers that do not own, but lease, capacity in the satellite system. Each carrier's investment would go into its rate base, and rates for service would be regulated by the FCC in the same manner as at present.

Sees No Domination

At the same time, no carrier's investment would enable it to dominate the joint venture. To speak for the AT&T company, let me say that this is absolutely all right with us. We do not want to dominate. What we do want, as I have stressed here today, is to meet our responsibility in serving growing need.

Industry and government, under the plan proposed, would work together to establish the best satellite system at the earliest practicable time. Responsibility for providing communication services would rest where it belongs—that is, with the common carriers under public regulation. Research and development would be encouraged, using all available technical resources. Competitive bidding would prevent favoritism in procuring equipment. Launching vehicles and facilities—which would probably represent four-fifths of the cost of the satellites in orbit—would be contracted for through the government, but industry would pay the bill and no taxpayers' money would be needed. Moreover, the door would be wide open for future authorized U.S. carriers to take part and for foreign communications agencies to share in satellite ownership.

Keep Enterprise Working

Finally, this plan would keep private enterprise working to maintain and extend U.S. leadership in international communications. It would demonstrate to the world the vigor of our system. I think this is tremendously important. So far as communications technology is concerned, it is private initiative in this country, as I have said, that has brought developments to the point where a satellite system looks feasible. How much better it will be to nourish and increase this vitality through continuing constructive partnership between business and government, than to turn space communications over to government ownership and thereby, on the very threshold of action, say to the world that we have lost faith in our own tradition.

I should add that Senator Kerr, chairman of the Senate Space Committee, has announced that he plans to introduce legislation that in many respects parallels the recommendations of the *Ad Hoc* Committee, so we may expect further legislative hearings in the next session of Congress.

Business—Government Cooperation

I have said this much on space communications partly because the subject is important in itself. But it is also one aspect of a much larger subject—I mean the many-sided problem of government-business relationships. I have a great hope that in this satellite venture, the communications companies and government will be able to work together in a truly constructive way, and give a practical demonstration that they are not at cross-purposes. Equally, I have the conviction that government and business generally must seek out and use all available means to learn from each other and deal realistically with the great economic problems and opportunities of our time.

President Kennedy has taken pains to emphasize that he and his administration are not anti-business. The force and sincerity of this position seem perfectly clear to me, for as the President has also brought out, the government is dependent on business progress for the realization of national objectives. It is certain, for example, that the goal of a balanced budget in fiscal 1963 depends on a further rise in industrial activity; and beyond this, the general economic theory of this administration, as I interpret it, looks to the power of enterprise to develop ever-expanding national resources. In such circumstances, I am sure the administration has no wish or reason to defeat its own purposes.

Starting with such a view, where do we go from there?

Big Future Problems

Today, the country looks forward hopefully to greater industrial production; to an increase in business spending for plant and equipment; to higher employment and a reduction in the rate of unemployment; and to a higher over-all level of personal income.

These are some of our most important near-term hopes. However, I sense that many people in government, as well as in business, share a deep concern regarding certain long-range fundamentals. We have big problems and we must deal with them in a big way.

We must solve the problem of the wage-price spiral, which has plagued us for years and remains a constant threat to the economy.

We face the sure prospect of increasingly aggressive and effective foreign competition in both domestic and world markets—and the equally certain necessity that we must equip ourselves to meet it.

Tax Reform a Must

We must revise and reform our system of taxation, which now hampers vigorous personal and corporate performance. The existing tax structure has, I am afraid, greatly weakened the incentives of many people. Also, it has become impossible for corporations to recover their true capital costs in depreciation charges. The net result is that taxes on income have in

fact been consuming capital—a process that destroys part of our resources and stunts economic growth.

Another matter of basic concern is that corporate profits have been diminishing. The position of profits in the economy has, in fact, seriously deteriorated. This year, when the Gross National Product will be nearly a third larger than in 1955, corporate profits will be no more and may actually be less—notwithstanding the fact that shareowners' investment has increased. Furthermore, an appreciable portion of these profits must be used to make up for inadequate depreciation allowances caused by inflation.

But is the deterioration of profits of concern only to shareowners and managers? Of course, it is not. I mentioned a moment ago, for example, that one of our hopes for 1962 is for substantial increase in business spending for plant and equipment. Always in the past, this has been a vital factor in stimulating employment. But also, it has always depended heavily on profits, and the pick-up in profits has usually come first. Of great importance to the future, therefore, is the question—will the level of profits be adequate to stimulate expenditures for plant, and along with these, employment, to a significant degree?

Profit Squeeze a Danger

The profit squeeze, if it persists, and even more if it is intensified, is a clear and present danger to economic growth. It will stand in the way of full utilization of the country's human as well as material resources. For example, even assuming an increase in business investment in plant and equipment, what will be its nature? As labor costs rise, more and more investment tends to be—inevitably *has* to be—for modernization and improvement. The tendency, perforce, is increasingly to substitute capital for labor. Hence, to the extent that increased plant investment reflects the necessity for reducing labor costs, it is not of any immediate help in bringing about higher levels of employment. Or to put the whole matter more bluntly, the tighter the profit squeeze, the tougher the problem of employing everyone who needs work and wants to work.

I have touched on profits, employment, taxation, foreign competition, and wage-price spiral. In these and other areas of economic life, individual issues and problems should, of course, be settled on their merits, and the relationships between government and business will continue to be tested and proved in action rather than in speeches. It is not to be expected that when the administration says it is not

anti-business, everyone in government will then demonstrate some ready-to-hand, uniform amiability, no matter what. Just as in a big corporation, I want to see people thinking for themselves, so in government, which is far larger than any corporation, and has more responsibilities, there are bound to be, and ought to be, many views on many subjects.

Continuity of Policy

At the same time, what is necessary for good progress is a certain broad and steady consistency. The prime requisite for sustained economic advance is reasonable continuity of policy within broad limits. If you cannot tell what is coming next, from what agency or from what governmental authority, you cannot even guess what your first step should be, let alone the next one. I greatly hope, therefore, that the administration's declarations will have widespread influence on people in government as well as on us in business, and will serve at the very least to minimize anomalies and contradictions.

In conclusion, I would like to state a personal point of view about the economic process. There is a popular theory which, if it would only work, would go a long way toward solving everything. You know it as well as I. It is based on what the economists fondly refer to as "increasing productivity." I believe this exists, all right, but I do not know how to measure it precisely, or to measure what creates it, and neither, I believe, does anyone else. At all events, each year, under this theory, increasing productivity should enable industry to create another inch or so of elbow room—room to pay higher wages, absorb costs, keep prices at levels that spur consumer demand, and thus establish the economic tempo required for fuller and fuller employment. Further, in the framework of this theory, it seems natural to introduce the appealing idea of voluntary restraint—restraint on the part of business to keep prices from rising, restraint on the part of labor to keep its demands inside the elbow room.

Lists Economic Realisms

But what we need in economic life is realism, and to me this is not realistic. The facts are that prices are determined by competition and/or regulation, profits have deteriorated, wages have not stayed inside the elbow room, and employment is incomplete.

What then would be realistic? I will try to make a few suggestions.

- It would be realistic to begin with the idea that in a market economy, markets do determine prices, and often more drastically than the highest degree of self-restraint.
- It would be realistic to abandon the notion that "productivity" increases with clock-like regularity, and that we can let the calendar, rather than the facts of life, be decisive in wage agreements.
- It would be realistic to cease putting up unrealized, uncertain, and hypothetical future gains in "productivity" as collateral for today's commitments.
- It would be realistic to recognize that gains in profits are as important to economic growth as gains in wages, and that the sacrifice of profits in order to increase wages and hold down prices will simply retard that growth.
- It would be realistic to lift and hearten the spirit of enterprise by tax reform designed to increase individual incentives.
- It would be realistic, in my view, for people in government to make themselves the forceful advocates of private enterprise—to encourage and stimulate it—to stir zeal and enthusiasm in its behalf.

Government Must Act

Am I going too far here? Does this sound strange? I think not. It is never enough to be not against something—to go places and get somewhere you have to be *for*, you have to be *pro*, you have to push and spur and encourage. What is it that makes for growth? What increases productivity? I say it is enthusiasm, drive, determination, the will to achieve. Everyone of us who manages or helps to manage a business knows that success depends utterly on human qualities that must be nourished and enriched, and on

(Continued on page 39)

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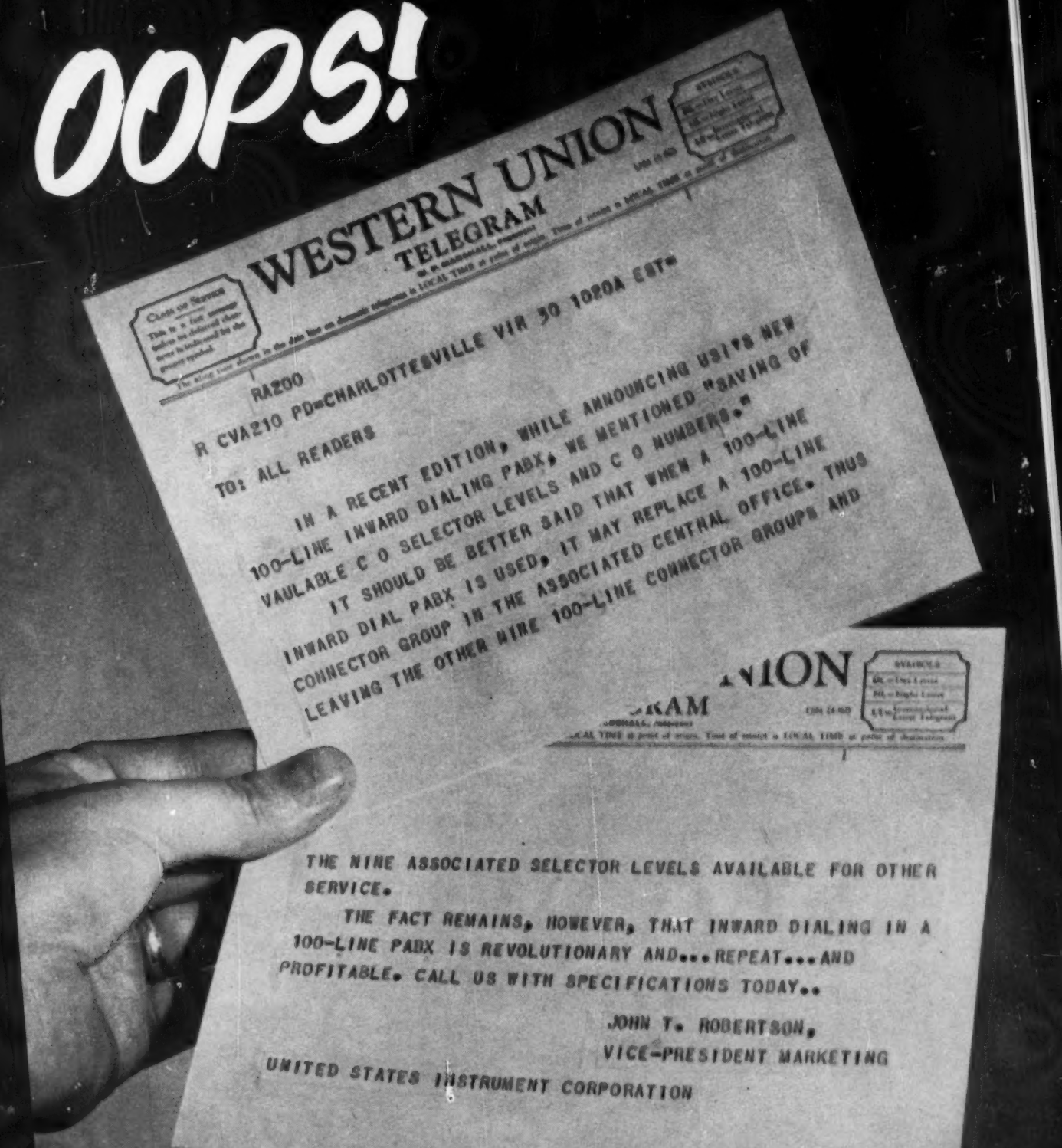
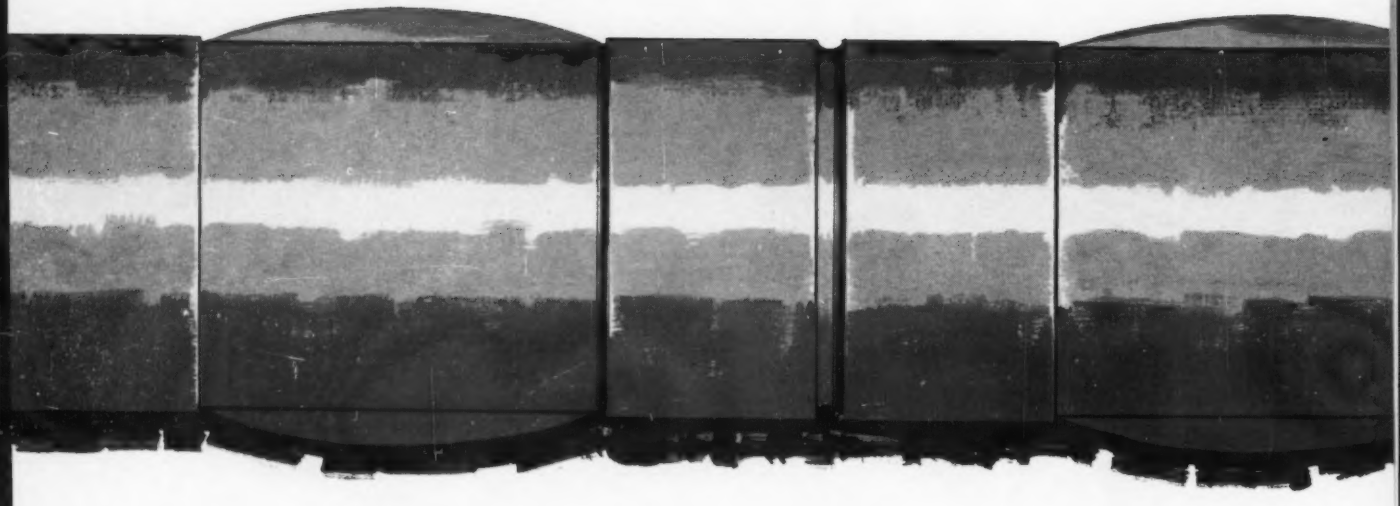
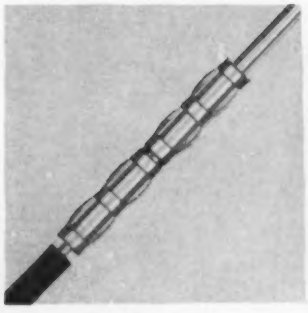

WESTERN UNION
TELEGRAM
Class of Service
This is a fast message unless its deferred character is indicated by the proper symbol.
RA200
R CVA210 PD=CHARLOTTESVILLE VIR 30 1020A EST=
TO: ALL READERS
IN A RECENT EDITION, WHILE ANNOUNCING USI'S NEW 100-LINE INWARD DIALING PABX, WE MENTIONED "SAVING OF VAULABLE C O SELECTOR LEVELS AND C O NUMBERS."
IT SHOULD BE BETTER SAID THAT WHEN A 100-LINE INWARD DIAL PABX IS USED, IT MAY REPLACE A 100-LINE CONNECTOR GROUP IN THE ASSOCIATED CENTRAL OFFICE. THUS LEAVING THE OTHER NINE 100-LINE CONNECTOR GROUPS AND
THE NINE ASSOCIATED SELECTOR LEVELS AVAILABLE FOR OTHER SERVICE.
THE FACT REMAINS, HOWEVER, THAT INWARD DIALING IN A 100-LINE PABX IS REVOLUTIONARY AND...REPEAT...AND PROFITABLE. CALL US WITH SPECIFICATIONS TODAY..
JOHN T. ROBERTSON,
VICE-PRESIDENT MARKETING
UNITED STATES INSTRUMENT CORPORATION

UNITED STATES INSTRUMENT CORPORATION
P. O. BOX 1288
CHARLOTTESVILLE, VIRGINIA
PHONE 3-5153

USI CORP.®

LEICH
LARGEST SUPPLY

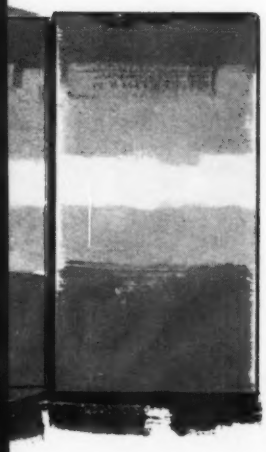




LEICH

Subsidiary of
GENERAL TELEPHONE & ELECTRONICS

offers you the STOCKS in the industry



NICOPRESS SLEEVES

At Genoa, Illinois, LEICH carries ½ million Nicopress sleeves to serve customers.

Each LEICH warehouse has a stock of Nicopress sleeves well related to the particular demand in its area. When you deal with LEICH, you can be sure of fast service from large stocks.

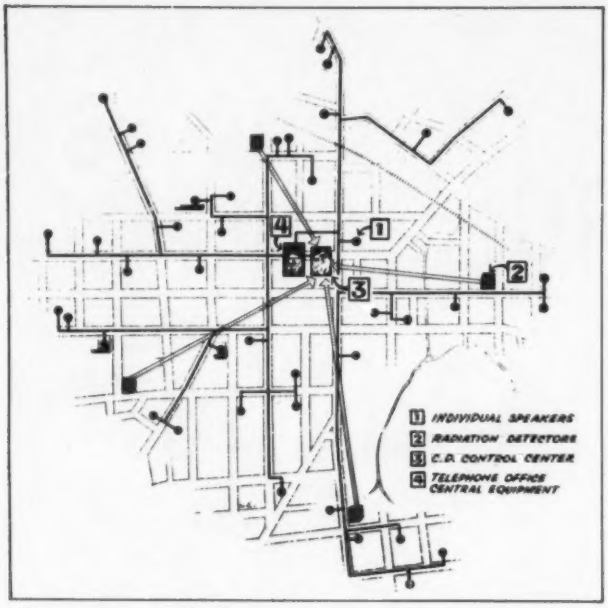
Ever since anyone can remember, LEICH has been devoted to *serving* telephone people well. Why not give us a trial? Make your next order a LEICH order.

NEW LEICH SUPPLY CATALOG

Everything you need right on your own bookshelf!

Order out supplies from these largest stocks in the industry and get LEICH'S famous fast, helpful service. If you don't have a copy, we'll be glad to send it on request.

LEICH SALES CORPORATION • 427 WEST RANDOLPH STREET • CHICAGO 6, ILLINOIS
PACIFIC COAST: 11401 W. PICO BLVD., LOS ANGELES 64, CAL. EAST: 3651 CONNECTICUT AVENUE, YOUNGSTOWN, OHIO
SOUTHWEST: 1227 SLOCUM STREET, DALLAS 7, TEXAS SOUTHEAST: 5126 SOUTH LOIS ST., TAMPA 11, FLORIDA • 2915 W. MOORE ST., RICHMOND, VA.
manufacturers of telephones, switchboards and related apparatus since 1907



Map of Johnstown, N. Y., showing speaker locations, other Civil Defense installations, and telephone office central equipment for test of CD communications system.

Telephone Company

THE New York State Civil Defense Commission on Dec. 7 tested a new alert, survival and fallout detection communications system in Johnstown, N. Y., on the 20th anniversary of Pearl Harbor Day.

The test was designed to determine the performance capabilities of the system which can provide vital Civil Defense information directly to homes, schools, hospitals and public buildings by means of special telephone lines from a Civil Defense Control Center. The test was performed, starting at 9:30 a.m., under simulated emergency conditions.

The system, designed by Teleglobe Systems of New York City, can be activated automatically by one Civil Defense official located in a county or other CD control center. It provides one-way communication to homes, and by electronic means can determine the approximate number of survivors in a given area and can provide local fallout readings in five separate sections of the city. The fallout information is fed automatically to the control center from stationary, unattended radiation detectors buried in the ground.

The system was designed especially for fallout protection and is equipped to provide local fallout and survival information even if the local Civil Defense headquarters is cut off from outside sources of information. The system's home speaker is designed for use in living quarters and can be transferred to a shelter area in the

Left Photo: Ira Kamen of Teleglobe AAA Systems, Inc., explains operations of the alert communications system to Lt. Gen. Francis W. Farrell, New York state Civil Defense director and Marshall K. Taylor, president of General Telephone Co. of Upstate New York, Inc. Right Photo: General of Upstate New York employe in subscriber's home making installation of Civil Defense communications system line prior to Johnstown test. Lines were terminated on conventional terminal blocks. The installers employed by Teleglobe, designers of the system, made a follow-up visit and installed a special station unit manufactured by Automatic Electric Co.

Plays Major Role in Civil Defense Test

New York State Civil Defense Commission tests communication system requiring telephone line facilities and central office equipment. General of Upstate New York exchange selected.

event of an attack. The system also can transmit Civil Defense training information directly to homes in non-emergency periods.

The test was conducted with the cooperation of Fulton County, N. Y. Civil Defense officials; Teleglobe, and General Telephone & Electronics Corp. and its subsidiary, General Telephone Co. of Upstate New York.

For the test, 50 locations were selected—some public buildings and businesses, but mostly residences—all of which were restricted to the base rate area of the Johnstown exchange. The locations were selected by the local Civil Defense director, based on his knowledge of the area.

In the majority of cases, the facilities were provided on a two-party-per-line basis. In a few instances, it was necessary to utilize a private line due to local cable conditions. Ultimately, it is hoped the system, if approved, can be offered to the public on an eight-party-per-line basis, or perhaps even more.

General of Upstate New York employes took the facility into the subscriber's premises and terminated the line on a conventional terminal block. Installers employed by Teleglobe made a follow-up visit and installed a special station unit, consisting of a speaker and amplification-control unit manufactured by Automatic Electric Co.

At 9:30 a.m. on Dec. 7, the speakers located in the selected public buildings and private homes were turned on automatically from the Fulton County Civil Defense Control Center and this terse announcement followed:

"This is an alert . . . the action you take in the next few minutes can save your life . . . an enemy attack has been launched against the United States . . . "

For the next 20 minutes, Civil Defense Headquarters advised test participants of the simulated approach of enemy missiles; reported a number of New York state cities had theoretically been hit, and that Johnstown had escaped the attack. However, it then reported that fallout would be the greatest hazard in the area and proceeded to advise residents what actions to take to survive the fallout period. Although the test consumed only 20 minutes, time was simulated to cover more than 13 hours.

Teleglobe CD System

The Teleglobe Civil Defense Communication System is designed to provide direct communication from a local Civil Defense control center to homes, public buildings and community shelters without fear of jamming or interception by an enemy.

The System uses special telephone lines to connect speakers in individual locations to a central control panel in a local Civil Defense control center. These telephone lines are separate and distinct from lines used in regular telephone service. The system is operated by one person who can turn on all speakers automatically.

The system is designed so that one or more speakers can be located in a building. The speakers can be plugged into any outlet connected to the special telephone line. Thus, one speaker can serve two outlets (one in a living area, such as a bedroom, and the other in a family shelter or cellar), if it is carried from one to the other.

Information is transmitted over the system via a microphone in the local Civil Defense control center.

Purpose of the System

The system is designed to:

(1) Give civilians advance warning of an enemy attack.

(2) Provide direct, official information to civilians during an emergency or enemy attack.

(3) Provide Civil Defense officials, via electronic scanning, with a rapid method of assessing damage in local areas.

(4) Provide Civil Defense officials, through fixed radiation detectors, with fallout information from several locations in a community.

(5) Permit the dissemination of local fallout information to civilians even if the local Civil Defense control center is cut off from other outside sources of information.

(6) Provide a practical and effective means of maintaining civilian morale in a post-blast period.

(7) Provide Civil Defense officials with a convenient method of supplying civilians with important Civil Defense training information in non-emergency periods.

Fallout Detection Features

In addition to its direct line to speakers in homes and public build-

(Continued on page 42)

SERVING TEXAS' FASTEST GROWING CITY

BY RICHARD L. POST*

PART 4. Parts 1, 2 and 3 appeared in Dec. 2, 9 and 16 issues.

IT WAS NOVEMBER, 1960, and time for The Southwestern States Telephone Co. to break phase three of its year-long extensive advertising and public relations program in Irving, Tex.

The obvious theme for this last major phase would be to call attention to the inauguration of the new BLackburn 5 central office—a major phase of the expansion and improvement program. Using the same design principles as had been used in the two earlier prongs of this advertising campaign, the words were now changed to BLACKBURN 5 IS COMING.

The continuity of design in the year-long advertising program contributed greatly to its success. Timing was also important. Breaking the *BLackburn 5 is Coming* theme earlier would have been far less effective.

But beginning Nov. 1, all the vehicle posters, the construction site signs, the billboards, were changed to the new theme. Newspaper ads in the Irving *News* carried the same new message.

The "BLackburn 5 is Coming" theme was featured on billboards and company vehicles during final major phase of Southwestern States' public relations and advertising program at Irving.

The November bill enclosure was to be perhaps the most important and have more impact than any in the entire series. The cover had the identical *BLackburn 5 is Coming* words and design. Inside was this short introductory message in letter form from Division Manager W. P. Esslinger:

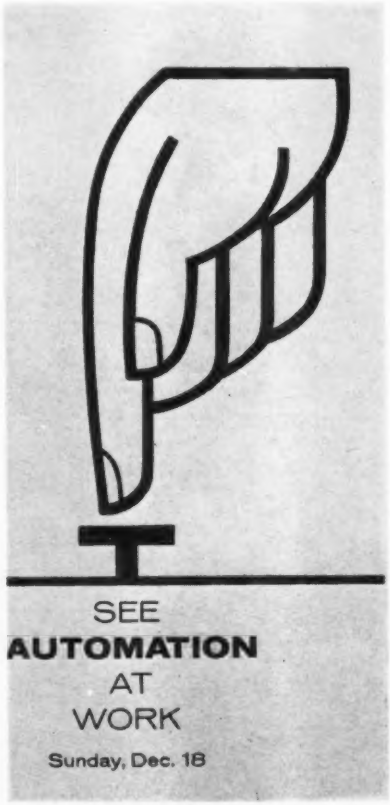
"Many of you who haven't driven north on Belt Line Road past Highway 183 recently will be surprised at what you will see there now.

"In place of the mesquite patch of nine months ago, there is now a handsome, modern, masonry building and three large steel buildings; instead of weeds and undergrowth, there is a smooth, graveled, 13-acre parking area. This is our new $768,000 *BLackburn 5 Telephone Center*. We expect it to be in full operation within two months, serving growing North Irving. On the following pages you will find a pictorial progress report of what's going on there right now. Then, we hope you'll drive by and take a look for yourself."

Inside was a series of pictures, dramatizing the new telephone center. These pictures included:

- Outside, overall view of the *BL-5 Telephone Center*.
- Inside view of the terminal room showing dial switching equipment.
- Trucks being serviced at the vehicle service center.
- Construction truck with trailer carrying huge cable reel leaving the telephone center.
- Warehouse stock of color telephones.
- Telephone number assignment desk with rotary card file capable of holding 47,000 telephone number cards.
- Closeup of installation of dial switching equipment.

Throughout November, there was increased publicity about the BL-5 exchange, the resulting number changes, and the effect that the new office would have on Irving telephone service.



Cover of bill insert inviting people of Irving to attend a December open house at "BL-5 Telephone Center." A full-page newspaper ad also carried the same illustration and inside copy.

*Mr. Post is Public Relations Director of Southwestern States Telephone Co., Brownwood, Tex.

On the night of Dec. 5, the new exchange was placed into service with appropriate ceremonies at the new office. Irving's mayor placed the first call from the new office. Preceding the cut-over, a dinner was held for key city officials and business leaders of Irving.

The climax of the year-long advertising-public relations campaign was the open house held on Dec. 18. It was one of the most successful ever held at a Southwestern States exchange.

Perhaps one reason for its success and large attendance was the promotion given prior to the open house itself. A bill enclosure of striking design and two full-page newspaper ads in the *Irving News*, were the primary advertising vehicles employed.

The bill insert and newspaper ads had a drawing of a hand about to push a button, with the headline *See Automation At Work Sunday, Dec. 18.* The main heading on the inside of the insert consisted of the words OPEN HOUSE, with both letter O's being telephone dials. Under these words followed: "At the new BLackburn 5 Telephone Center—Belt Line Rd., North of HWY. 183—From 1 p.m. to 7 p.m.—Sunday, Dec. 18."

The copy followed:

"BLACKBURN-5 IS COMING—so bring the family and come on out for a firsthand look. Free balloons for the youngsters, free gifts for the grownups. Refreshments for all!

"SEE AUTOMATION AT WORK! Floor-to-ceiling banks of complex switches and relays will complete telephone calls before your eyes. This is automatic switching equipment from one of the leading electronic companies in the nation. You'll see —and hear—the "brain center" of the new BLackburn-5 exchange in operation. An educational experience for children—a fascinating sight for grownups. Skilled telephone men will explain each step.

"SEE THE MAINTENANCE TEST BOARD! When trouble occurs in outside cable or equipment miles away—engineers working at this modern console can pinpoint its location, dispatch maintenance crews to fix it fast!

"SEE THE SERVICE ASSIGNMENT CENTER! Here, installation, construction, and maintenance work is scheduled each evening. Equipment is assembled, work orders prepared, trucks made ready during the night so that telephone crews can get a fast start next morning!

"SEE THE UNDERGROUND CABLE VAULT! Massive, lead-sheathed cable from all parts of north Irving converge at the entrance to this underground chamber. Nearly 10,000 individual wires emerge from the cable, fan out, and enter the switching equipment on the floor above.

"SEE NEW IDEAS IN PHONES FOR HOME AND OFFICE! See the tiny, compact, Petite telephone that saves you space, puts new convenience at your bedside . . . a hands-free telephone for kitchen, laundry, or office you can use while you work . . . the remarkable Electronic Secretary that answers while you're away, takes the message, and repeats it for you when you return . . . a special telephone for the hard-of-hearing . . . a phone with a dial that lights up for nighttime use . . . other modern wall and desk-type telephones in decorator colors.

"SEE THE ENTIRE BL-5 TELEPHONE CENTER! Thirteen acres of buildings and equipment as modern as any in the southwest. Built

BLackburn 5
is coming!
COLOR-BRIGHT PHONES FOR MODERN HOMES are stored in the BL-5 warehouse. Most of the phones in boxes here — available in 10 colors — have already been assigned to customers and are being installed daily.
HEART OF THE BLACKBURN-5 TELEPHONE CENTER is the equipment room. A crew of highly trained Automatic Electric company engineers are connecting dial switching equipment for 1,750 lines and 3,000 terminals in the new building.
TWO MILES OF UNDERGROUND CABLE, loaded and ready to roll, will help relieve and extend present cable facilities. Several thousand miles of it will have been installed by the end of this year — as part of our $4.4 million expansion. This reel of cable is capable of carrying up to 600 phone conversations simultaneously.
OVER-ALL VIEW of new $768,000 BLackburn-5 Telephone Center on Belt Line Road. In foreground is the BL-5 Central Office. Behind and to the left are steel buildings housing Storeroom, General Construction, and Truck Terminal facilities for the North Texas Division of Southwestern States.
GASSED AND READY TO GO, bright and early. Trucks are serviced each evening, then parked in the Truck Terminal Building where night crews distribute assignments and load equipment for the next day's work.
BLACKBURN-5 TELEPHONE CENTER

Attractive six-page November bill insert which probably had more impact on the Irving public than any in the series of bill enclosures. At the top is the front cover of the insert. Below is a portion of the three page inside spread, showing a series of photos dramatizing the new Irving telephone center. Also included was a message from W. P. Esslinger inviting the public to "drive by and take a look for yourself."

to serve the growing needs of a growing Irving."

Thus concluded a year-long public relations and advertising campaign—unique in many ways because of the advertising media used—but considered by all to be very successful.

The purpose of the program had been to increase the public impact of the improvement program, thus making the delay in upgrading seem not quite as disagreeable to the subscriber because of his understanding of how the service problem arose and what the company was doing to remedy the situation.

Obviously, it is difficult to measure in precise figures the results and the success of the campaign, since Southwestern States took no before-and after opinion surveys. However, there was no doubt about the fact that the number of telephone complaints was decreased materially—certainly one indication that the program accomplished its purpose.

An unsolicited letter was received from Guy C. Graves, general manager of the Irving *News*. It read:

"Permit me to congratulate you on the excellent series of advertisements . . . In the Irving area, it has accomplished its purpose and has resulted in a much better understanding of our telephone system. It has also brought appreciation of the great amounts of money that have been and will be spent to stay ahead of the growth in a very forward-looking way."

"BLackburn 5 Is Coming" appeared on billboard on Dallas-Irving expressway.

What did this 1960 extensive advertising and public relations program in Irving cost Southwestern States? About $10,000—or approximately $1.00 for each subscriber in Irving for the entire year.

A great portion of credit for the successful campaign should go to Stewart Mitchell and his associates at Tracy-Locke Advertising Agency for their guidance and creative ideas. They fully grasped the situation and their recommendations in nearly every instance, were accepted.

Although this was a special, intensified campaign that just lasted through 1960, it very obviously would have been a mistake to drop all advertising, public relations, and information programs on Jan. 1, 1961.

The follow-up to the campaign was vital and essential.

In keeping with plans to keep Irving subscribers fully informed as to upgrading plans and progress, another large street map was used to show that the company had divided the city into 19 more center areas. Each area was numbered. The map was placed in the business office lobby so that subscribers could learn when upgrading began or was scheduled to begin in the area in which they lived and the estimated completion date.

A news story in the Irving *News* gave the complete upgrading schedule. Later news stories detailed the progress being made in each service area.

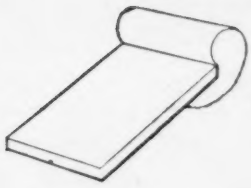
A most unique follow-up tactic came in July, when the company mailed to each subscriber a copy of the map showing the total applications received for upgrades in each of the 19 areas, total upgrades completed, and the total applications for upgrades remaining. Since the number of upgrade applications had risen to 5,240, it became apparent that the upgrading program would take more time to complete. Another "progress report" map showing the same information for

(Continued on page 39)

BLackburn 5
is coming!
A modern telephone center north
of Highway 183, facing Belt Line Road.
Operational by 1961 — to serve growing north
Irving. Ultimate capacity: 5,000 lines and 10,000
terminals. Initial cost: $768,000.
PART OF OUR $4.4 MILLION IRVING EXPANSION!

Newspaper ad featuring "BLackburn 5 is Coming" and giving pertinent information concerning Irving project.

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

OUT IN CALIFORNIA they are trying out a new type of telephone booth designed especially for outdoor use, particularly for city sidewalks. These public telephones are sheltered by a glass canopy and mounted on a candy-striped pole. It is claimed that this "open air" design is easier to use and much cooler in the summer than the enclosed booth.

The sidewalk booth seems to be a new and good idea in any town. This writer was amazed recently to note that, in Manhattan, sidewalk booths are installed on practically every block. It is understood that these booths pay well, and that they do not reduce the take from other nearby paystations. Apparently, the sidewalk booth is used primarily to make impulse calls, and if the booth were not so convenient, the calls would never be made.

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The transmission and communications improvement committee of the Pennsylvania Independent Telephone Association, and the Bell Telephone Co. of Pennsylvania, recently prepared Bulletin No. 5 titled:

"How to Make an Engineering Cost Study".

The introduction of this paper states:

"In the telephone industry, as in any other industry, management is frequently confronted with two or more methods of adequately meeting a need. In fact, an engineer might be judged by his ability to propose alternatives to meet a given need.

"The final selection of a particular plan requires the evaluation of such matters as relative service advantages, operating conditions, availability of manpower and material, government requirements, capital requirements, and the proper evaluation of the cost of each plan.

"The economies of several alternatives are usually not apparent from a statement of their future receipts and disbursements until they have been placed on an equivalent basis. It is not within the scope of this paper to present a complete course on the subject of engineering economy, but it will present the basic fundamentals of preparing comparative cost studies."

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Back in December, 1960, multiplex radio equipment was placed in service by the New England Telephone & Telegraph Co. to connect the Littleton, N. H. central office and the top of Mt. Washington.

This was an historic event, as no consistent, or direct, telephone communications with wire or cable had ever before been possible between the isolated mountain summit and the outside world, because of the rigorous weather conditions. Heavy icing, landslides, and high wind conditions placed cable out of operation in short order. Problems of maintenance proved prohibitive, especially during the long winter season, when temperatures average below freezing nine months of the year and sometimes hit 40 below zero at their coldest.

The multiplex (i.e., many circuits) ultrahigh frequency radio unit began operation satisfactorily early in December, 1960. Its Mt. Washington equipment is housed in the U. S. Weather Observatory there to protect it from the elements.

It contains four Gorman exchange circuits and connects stations on the summit, via the Littleton central office 20 miles away. The stations include a paystation, the U. S Weather Observatory, the U. S. Air Force Cold Weather Testing Laboratory, and a hotel for tourists and hikers. These circuits can be expanded to eight, if additional service becomes necessary.

This equipment is not microwave, and differs from it in many ways. First, its radio frequency band is 450 megacycles, as compared to microwave's 6,500 megacycles; second, its purpose is much the same as the drop line and wire connecting the telephone in your home to the central office.

Microwave, on the other hand, is designed to handle long-haul toll traffic. Moreover, it has an advantage over microwave, in that its lower frequency band does not require line-of-sight from transmitter to receiver. In microwave, the sending and receiving units must be within sight of each other, and with no buildings, hills or other obstructions between them.

UHF, however, can bounce over hills. This is necessary on this installation, since the Littleton central office is not in direct line of sight with Mt. Washington.

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Our good West Coast friend, D. K. Foley, while on a recent vacation trip, stopped at Coos Bay, Ore., where the West Coast Telephone Co. had only lately been converted to ANC. He was a bit surprised, though, when the "0" level operator answered with a cheerful "Good morning, may I help you?" Foley said he complimented the operator on her new phraseology, and that she seemed pleased.

•

"Cross Talk"

It took our early settlers months to cross the country. With today's traffic problems, that's still par for the course.

•

To have the world beat a path to your door, try to take a quiet nap.

•

"Fido is rapidly losing his standing in the old tradition that a dog is man's best friend. It is generally agreed that today the telephone is man's best friend."—Jack White.

New Bell TL Microwave Transmits to 200 Miles

A NEW, LOW-COST radio relay system for transmitting voice, data and teletypewriter messages over short routes is now being manufactured by the Western Electric Co. and installed in various Bell Telephone company areas. Called TL Microwave, the new system will serve the telephone companies' needs for more economical transmission over distances up to 200 miles.

The first of the TL Microwave systems is now being put in service by the Mountain States Telephone & Telegraph Co. between Hardin and Billings, Mont. Additional TL systems are scheduled for installation by Western Electric by the end of 1961 at locations in Wyoming, Arizona, Idaho, Colorado, Nevada, Arkansas, and Missouri.

TL Microwave provides a radio system, according to Bell Telephone Laboratories, that is competitive in cost with cable and open wire, where requirements are as low as 25 to 50 circuits. At the same time, TL's maximum circuit capacity—up to 240 simultaneous telephone conversations, or many channels for data transmission—is high enough to provide for many years of future growth requirements.

TL is expected to be especially useful and economical for interconnecting central offices in lightly populated areas, for linking suburbs and industrial areas with central cities, providing facilities for data transmission and special-rate service packages such as Telpak, and for providing temporary or emergency transmission services.

The basic TL system consists of two terminal stations and up to nine intermediate relay stations spaced at intervals averaging about 15 miles. Relay station facilities, which require only a small piece of ground for a site, consist of antennas and reflectors mounted on wooden H-frame poles or steel towers.

A typical installation consists of two compact, weather-proof cabinets located at the base of the tower. These identical cabinets house the radio and power equipment for sending and receiving signals along the two-directional transmission pathway.

The terminal stations require only about half as much equipment as the relay stations, and normally are built into relay racks for installation in central office buildings.

The TL system is said to be flexible and requires a relatively small power source. Compact design permits TL stations to be installed near commercial power sources and along roads where existing utility rights-of-way have been established. The low power requirements, made possible by extensive use of semiconductors, enable the system to operate on storage batteries kept charged by commercial power. The batteries can sustain operations for more than 20 hours if commercial power fails.

TL radio equipment is being manufactured at Western Electric's Merrimack Valley Works in North Andover, Mass. Each outdoor cabinet—the basic unit in the system—houses a radio transmitter and receiver, carrier equipment, power apparatus and an alarm device to warn of equipment failure or breakdown.

Other W.E. plants at Allentown, Pa., Kearny, N. J., Winston-Salem, N.C., and in Chicago, Ill., are manufacturing components which are assembled into the final product at Merrimack Valley.

Bell Labs, which developed the basic designs for TL, began work on the project in January, 1960. In August, 1961, only 19 months later, the first units of the finished product were shipped—one of the fastest new-product developments in Bell System history. A TL system can now be provided by W.E. six to eight weeks after receipt of a telephone company order, it is reported.

TL Microwave is the fourth major type of radio relay network to be developed for Bell System use. The TD-2 and TH Microwave systems are now used to transmit long-distance telephone calls and coast-to-coast television; while the TJ system is used in similar transmissions for distances of 200 to 250 miles.

The new TL Microwave system, however, is described as one of the first transistorized microwave systems to go into production in this country. Because of the low power requirements of the solid-state circuits, and highly efficient new klystron power tubes, the system requires only 150 watts of power per terminal and has the additional feature of being able to operate on storage batteries, should a power failure occur. The use of batteries for emergency power and the compactness of the solid-state circuitry make possible the complete repeater station being mounted directly on the poles or tower supporting the antenna. Previous systems have required separate buildings to house electronic equipment and bulky engine generators for standby power.

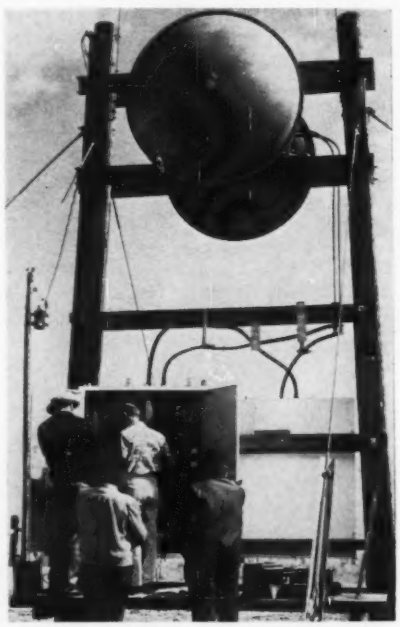
Designed for relatively light traffic and distances up to 200 miles, the TL microwave system provides up to six two-way broadband channels, each of which can carry 240 telephone conversations. The primary uses for TL will be to replace, or augment, existing open wires, provide spurs on heavier-traffic microwave routes, and provide short-term or emergency restoration service. In most parts of the United States, stations will average about 15 miles apart.

The new system operates in the 11,000-megacycle frequency range far above the 4,000 and 6,000 megacycle ranges, which carry the major share of telephone and television traffic. The higher frequency was chosen to prevent interference with present microwave channels, which are becoming increasingly congested.

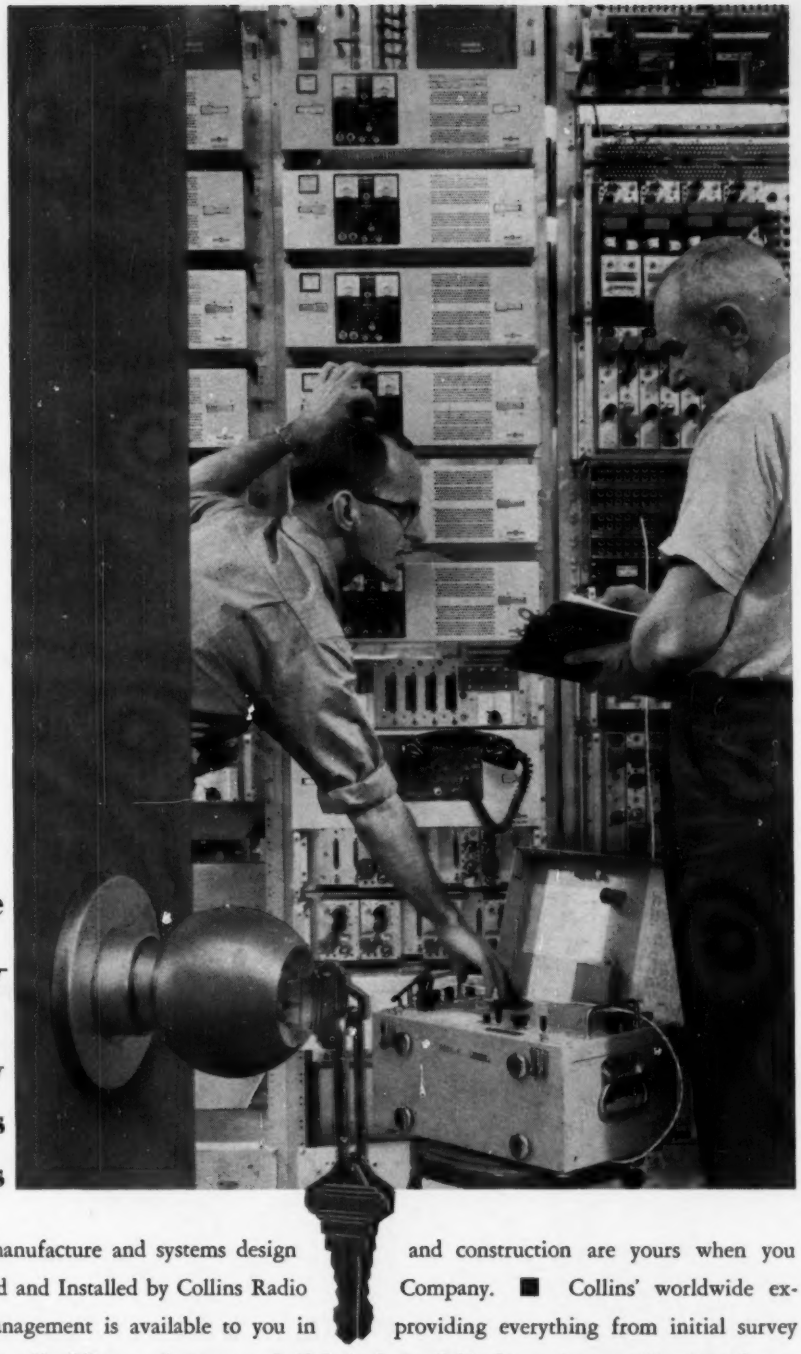
Bell Labs reveals details of the new microwave system as follows:

At the heart of the TL system are the two newly-developed klystron tubes, which serve as the high-frequency sources for the transmitter and the receiver oscillator. These tubes are designed for an operating life of 40,000 hours, and are the only electron tubes

(Continued on page 40)



This microwave relay station near Billings, Mont. is part of the first installation of the new TL Microwave system now being produced by Western Electric Co. The new system was developed by the Bell Telephone Laboratories as a low-cost, light-traffic system to meet telephone companies' needs for more economical transmission over distances up to 200 miles.



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COLLINS

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it's so easy to expand with Strowger"

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**District Manager, Western District, Automatic Electric Sales Corporation*

AUTOMATIC ELECTRIC

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GENERAL SYSTEM

Telephone Facilities Core of Van Lines' Communications

By HELEN HARDIN*

THIRTY-THREE YEARS ago, the communications system of a van service (now nationwide in extent) was the penny post card, mailed to a fellow mover, asking if he could line up a return load. Today, this nationwide trucking service, Allied Van Lines (AVL), depends on what it terms its life-line of communications services (supplied principally by the telephone industry), to save time, and to effect savings.

Without quick communications, neither speed nor good service, which are described as "the secret of successful long distance moving," can be achieved, the AVL recently reminded its readers in an article titled "Penny Card to PBX", published in the lines' magazine, "AVL Dispatcher", for July, 1961.

Allied serviced 172,000 shipments of household goods in 1960, issued permits for 7,400 trucks, tractors, and trailers, and registered over 5,000 qualified drivers.

When many large businesses, such as Allied Van Lines, are encouraged to install and maintain their own private communication systems, the report of the effective use of the telephone industry's facilities in a successful, nationwide operation should be of interest to all telephone companies.

Leo Cieplucha, AVL operations manager at Broadview, Ill., is the man who pushed hard for AVL's advanced communications system. He puts it this way: "Allied agents and management all over continental America, have, by bitter, and sometimes sweet, experience learned that the fastest way to contact a fellow mover, driver, or dispatcher on a shipment pays off both in service rendered and over-all profit.

"So sure are we of this that, if total wire communications bills of our 870 agents, district offices, and Broadview (Ill.) were added up, it conceivably would exceed a million dollars a year. The wire services bill at Broadview and the five district offices alone is about $400,000 annually."

Allied's communications system now incorporates TWX (teletypewriter), PBX, WATS (Wide Area Telephone Service), FX (foreign exchange service), and other types of telephone industry facilities, as well as Western Union service, and keeps AVL in touch all along the line, from Caribou, Me. to San Diego, Calif., and from Seattle, Wash. to Key West, Fla., and to many other points radiating from its network.

Said Mr. Cieplucha, "Sure it's a lot of money, but we're on top of every move within the hour and thousands of return shipments are picked up each year that otherwise would be lost."

The "AVL Dispatcher" story reports that the telephone is the "most potent and most used servant" in its vast communications system. On an average summer Friday, specifically June 30, 1961, it is reported, two of its operators handled 752 incoming calls between 7:45 a.m. and 5:30 p.m., and of these calls, 450 were long distance. No check of outgoing lines was made by Allied Van Lines, since many of them are on direct lines.

The inner telephone system of the Broadview, Ill. office is the PBX. In addition, call director service has recently been installed at Broadview, Chamblee, Ga., and at Euless, Tex.

When the main desk operator receives a call for the dispatch office, she relays it at once to the telephone girl in the department who is sitting on a platform facing the 10 dispatchers. Without benefit of any apparatus, the main operator calls out, "Stacey on 25" . . . "Hurst on 32" . . . "Smith on 9. . . ."

If the dispatcher is already on the telephone, the caller is advised, and

Three skilled AVL TWX (teletypewriter) machine operators at North Hollywood, Cal., work as communications battery to speed shipments for the big van lines. They are (left to right): Jerry Groover, Jean Kaehny and Beverly Whear.

*Miss Hardin is an associate editor of Telephony.

A look behind scenes at Broadview, Ill. reveals (at left) James McCune, Illinois Bell Telephone Co. consultant, pointing out to Mrs. Bokelmann the maze of wires leading to Allied Van Lines' dispatch office Call Directors. A large share of Broadview million-plus feet of telephone wire is in this room, which is devoted entirely to the association's communications facilities.

With Call Director at left twinkling constantly, Mrs. Louise Bokelmann of Allied Van Lines files calls for Broadview, Ill. district manager. While Call Director stores messages, the main switchboard of the van lines association is clear for incoming calls. The Call Directors have replaced key boxes at Allied's Broadview, Chamblee, Ga., and Euless, Tex. terminals.

asked if anyone else can help. If no one can help, the call is then stored until the dispatcher can answer the call. As long as the dispatcher is busy, in best approved telephone company style, the operator cuts in at regular intervals informing the caller that the dispatcher is still busy. When the dispatcher is available, he then takes the calls in the order in which they were stored.

With the call director thus freeing the main switchboard for incoming calls, many complaints from agents have been eliminated. Now, the call director makes it possible to have 30 different incoming calls active in the dispatch office at the same time. Secaucus, N.J. and Seattle, Wash. have utilized multiple-key boxes or push button equipment.

Foreign exchange service (FX) is another money-saving means to speedy and good service, according to Allied Van Lines. With this FX, a direct line is maintained between certain dispatch offices and certain U.S. cities where Allied may have between four and eight agents.

The van lines association has leased, under an unlisted number, 2,896 miles of such line. FX is used only by its participating agents, Allied offices, and drivers reporting to the van lines.

It is available only where savings and efficiency have proved its value. It is now operating successfully, according to AVL, between the Secaucus, N.J. AVL office and Boston Mass.; Philadelphia, Pa. and Washington, D. C.; and between Broadview, Ill., Detroit, Mich., Milwaukee, Wis. and Kansas City, Mo. It is available on a 24 hours-a-day, seven-days-a-week basis, or for as long as these offices are open.

AVL was reported to be also exploring possible use of FX between Broadview and Cincinnati, O., Des Moines, Ia., and Minneapolis, Minn.; and between Secaucus N. J., and Buffalo, N. Y.

WATS (Wide Area Telephone Service) is also proving its worth for the large volume of AVL long distance telephone traffic. The trucking service has regard for the flexibility of this type of service, which permits calls as often as needed, talking as long as necessary within a geographical area, and at a flat monthly rate, not overlooking also the fact that there is less tax this way on the bills rendered by the telephone company.

The Broadview office is using three areas for its WATS. Band 1 covers Wisconsin, Iowa, lower Michigan, and Indiana; Band 2 covers states in a wider perimeter; and Band 3 covers a still farther out circuit.

In a survey of usage during the first full month of WATS, AVL found that Band 1 was used 710 times, or for 37.3 hours; Band 2, 1,169 times, for 56.8 hours; and Band 3, 1,116 times, for 74.2 hours.

TWX (teletypewriter service) connects more than 350 Allied agents with one another and with AVL terminals.

In addition, each of the terminals is connected by a private leased teletype service. This service between five AVL terminals, the "Dispatcher" explains, is used to transmit manifests which contain detailed information on every van and driver, and on the shipments abroad. The manifest helps dispatchers pre-plan return loads, and give prompt answers to agents' inquiries.

AVL has two basic rules which fully utilize its communications system. They are: (1) All messages must be answered within one hour; and (2) All personnel should use TWX in lieu of other communication modes on routine matters.

TWX equipment at AVL is operated by skilled, experienced technicians, handling messages transmitted and received at 75 words a minute usually, and increasing the speed to accommodate 100 words a minute, if necessary. The skilled operators pre-cut tapes for the manifests and messages. These tapes are then coded for the specified recipient terminals.

"The Dispatcher" states that AVL purchases TWX service on a time and mileage basis from 9 a.m. to 6 p.m., Monday through Friday, and on Saturdays, 6 a.m. to 2 p.m., New York time.

Operations manager Cieplucha was, at the time "The Dispatcher" article appeared, looking into the possibilities of TELPAK as a further extension of AVL's communication system.

Allied's expenditure for Western Union telegraph service also is described as "a sizeable sum," and the service is frequently used by the big van lines' permit department headquartered at Broadview.

As an example of this usage, "The Dispatcher" revealed that about 750 money orders were sent to state licensing bureaus via telegram for emergency state permits during June, 1961.

To this cooperative enterprise, made up of 870 large and small company van members, communications are vital. There must be nationwide coordination of work and plans, and cooperation among the Allied agents. The ability to ask questions, and to get immediate and detailed replies, is being achieved daily through the use of the telephone and teletype. AVL looks confidently to the future, with an efficiency expert's eye for saving time through its communications facilities, and with the hope, naturally, of holding the line on costs.

Bell System To Install First Full-Scale ECO in New Jersey

A TOWN IN northern New Jersey has been selected for the location of the Bell System's first full-scale electronic central office, E. Hornsby Wasson, president of New Jersey Bell Telephone Co., announced on Dec. 14.

The new office will be located in Succasunna, a community of about 6,800 population, 20 miles west of Newark. Construction of a new building to house the equipment will start next spring. It will serve about 4,300 subscribers.

Mr. Wasson said research on the electronic central office was started at the Bell Telephone Laboratories in New Jersey prior to World War II. The first production model is the result of close teamwork over the years by the Bell Labs, the Western Electric Co. and the operating telephone companies of the Bell System, he said.

A forerunner of the Succasunna ECO has been tested for more than a year in Morris, Ill. (TELEPHONY, Nov. 19, 1960). Over 400 subscribers of the Illinois Bell Telephone Co. participated. Although similar in concept to the Illinois trial, the New Jersey Bell installation is designed for commercial production to meet the needs of Bell System customers. Among the unique telephone services which the New Jersey installation will be capable of providing are:

Two-digit dialing for frequently called numbers.

Automatic routing of incoming calls to another telephone when the originally called line is busy.

Dialing a code to forward incoming calls to another telephone when the customer is away from home.

Dialing a third party into an existing telephone conversation.

These and other features can be "programmed" into the ECO's memory which is capable of storing millions of bits of information for use on instantaneous command. The exact features which will be offered initially are still to be determined.

Mr. Wasson said construction of the new building and installation and testing of the highly complex electronic equipment should be completed by mid-1965.

The installation of ECO in Succasunna will mark the second time in recent years that New Jersey Bell will have introduced an important innovation in telephone service for the Bell System. The nation's first Direct Distance Dialing by subscribers began in Englewood in November, 1951.

Carol Kowitski, a New Jersey Bell secretary, displays two key components of electronic central telephone office during visit to Bell Laboratories in Whippany, N. J. "Logic package" in foreground is part of the electronic brain which forwards instructions from the customer to the switching equipment in the office. Teletypewriter behind it provides link between man and machine. Instructions can be typed on teletypewriter and the office will follow the directions by itself.

John J. Yostpille, electronic central office project director for Bell Laboratories, describes operation of the ECO automatic control center to Joan Binn, visitor from New Jersey Bell. The control center pictured here is forerunner of one which will be installed in the Bell System's first commercial ECO in Succasunna. It enables personnel to check on over-all operation of the electronic equipment. Control panel below is used to turn on or shut off sections of the ECO equipment.

A novel feature of the new electronic central office is that it continually checks itself to insure that everything is operating correctly. If trouble should develop, the ECO pinpoints the problem on its own. It takes appropriate corrective action and reports the location and nature of the trouble on a teletypewriter tied into the electronic equipment.

The ECO equipment also has the uncanny ability of carrying on a written conversation with its maintenance crew.

For example: If a customer wants to change from two-party service to an individual line, the attendant types the information on the teletypewriter associated with the equipment. Instantly, the ECO acknowledges the order by repeating it on the same machine. The attendant then checks the message to see that it has been repeated correctly. And, if it is accurate, he merely types a period. This tells the ECO equipment that its thought processes are in order, and it immediately does what it has been told.

Through the wide use of transistors and other solid state devices the ECO equipment operates approximately 1,000 times faster than conventional switching apparatus.

Courts and Commissions

Question Right of O. Bell to Furnish Intercom Service

An Ohio Public Utilities Commission decision involving a question of whether Ohio Bell Telephone Co. can furnish private telephone systems—intercoms—is being appealed to the Ohio Supreme Court by Mid-America Telephone Co. of South Euclid (TELEPHONY, Aug. 19).

Mid-America contends that Ohio Bell is providing service of an "exclusively private nature", unconnected with its general exchange telephone service.

The Ohio Public Utilities Commission earlier rejected a complaint by Mid-America that Ohio Bell has no legal right to supply private intercommunication service. The commission, after its original rejection early in August, twice denied petitions for rehearings.

Mid-America testified in proceedings before the commission that it had to go out of business after unsuccessful attempts to sell, service and lease private telephone intercom systems. It blamed competition from Ohio Bell.

Ohio Bell, however, has contended that the private service is "no different from exchange service except it is confined in a building or contiguous property".

It pointed out that it has furnished intercom systems to business since 1929, and its tariff on this type of facility has been officially listed since 1949.

In its plea to the high court, Mid-America asked that the commission-approved tariff on such service by Ohio Bell be withdrawn or cancelled and that the telephone company discontinue such service and be enjoined from furnishing such service in the future.

Charles R. Leaf, head of Mid-America, said he was appealing the commission's dismissal to the Ohio Supreme Court because it was "very weak" and because both the U.S. Supreme Court and the U.S. Justice Department have ruled that the telephone company "cannot legally install and service intercommunication systems in Washington or on any federal territory".

He said the federal government "has one policy and the state of Ohio has another. There is a great body of law, numerous decisions, in our favor and only two cases in the telephone company's favor".

A spokesman for Ohio Bell said the company would follow the supreme court proceedings only as an interested observer.

Texas Court Rules Cities Cannot Set Intrastate Rates

Cities in Texas cannot regulate charges for telephone calls to other cities within the state, according to a ruling handed down in San Antonio by the Fourth Texas Court of Civil Appeals (TELEPHONY, July 1).

The appellate court upheld a district court injunction against an attempt by the city of Weslaco to set General Telephone Co. of the Southwest's rates for calls from Weslaco to other points in Texas.

Justice Jack Pope said there is no way for intrastate telephone rates to be regulated under existing Texas law. He said Texas and Iowa are the only states that do not have state control of intrastate charges.

In a split decision, the appellate court dissolved a portion of the injunction which barred Weslaco from enforcing a scale of local rates adopted in a city ordinance in June, 1960.

The injunction was obtained by the General company which contended that the rates proposed by the city would not give the company a fair return on its investment and would amount to confiscation of its property.

Approve General of Georgia's Purchase of 3 Companies

General Telephone Co. of Georgia on Nov. 30 was given permission by the Georgia Public Service Commission to acquire all the outstanding capital stock of Consolidated Telephone Co. Inc., Moultrie, and its subsidiaries; of Broxton Telephone Co. and of Trion Telephone Co. (TELEPHONY, Sept. 23).

Subsidiaries of the Consolidated company are Dalton Telephone Co., Douglas Telephone Co., Chatsworth Telephone Co., Summerville Telephone Co. and Gold Leaf Telephone Co., Moultrie.

General of Georgia is a new corporation, separate and distinct from the General Telephone Co. of the Southeast, Durham, N. C.

The acquired companies, which will be merged into a single surviving corporation, serve the following Georgia communities: Berlin, Boston, Broxton, Chatsworth, Cohutta, Coolidge, Dalton, Doerun, Douglas, Hahira, Lakeland, Lyerly, Meigs, Menlo, Morven, Moultrie, Norman Park, Pavo, Ray City, Summerville, Trion and Tunnell Hill.

Two Companies Ask Purchase Authorization in Arkansas

The Union Telephone Co., Junction City on Nov. 29 asked the Arkansas Public Service Commission for permission to purchase the Junction City and Dodge City exchanges at a price of $132,000 (TELEPHONY, Oct. 28). The two exchanges, owned by John W. Carter, serve 439 telephone stations.

The Union company on Oct. 10 asked the commission to recognize it as a public utility.

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The Hampton Telephone Co. on Dec. 8 asked the commission to serve rural unallocated areas in Bradley County and announced its intention to buy the Banks exchange and convert it to dial service. The cost of expansion, the Hampton company said, will amount to about $66,150.

General of Cal. Denied Directory Advertising Raise

The California Public Utilities Commission on Dec. 6 denied a request by General Telephone Co. of California, Santa Monica, for a $2,384,000 annual increase in classified directory advertising rates.

General had contended that its overall earnings, including telephone service, were now yielding a 5.86 per cent return and that the increase would have provided the company with a 5.99 per cent return.

Authorize Dividend in N.C.

The Central Telephone Co., Hickory, N. C., on Dec. 8 was authorized by the North Carolina Utilities Commission to declare a stock dividend of one

share, with a par value of $10 for each 100 shares held by stockholders of record Nov. 27.

Approve Stock Acquisition, Tie-In with Metroplan in N.Y.

The New York Public Service Commission on Dec. 13 authorized Midstate Telephone Co., Manlius, to acquire all outstanding stock of Cazenovia Telephone Corp. as a preliminary move toward the ultimate merger of Cazenovia into Midstate.

In its action, the commission authorized Midstate to issue up to 3,125 additional shares of its common stock and to exchange them, on a 5-for-1 basis, for the 625 outstanding shares of the Cazenovia company's common stock.

Midstate was also authorized to issue an additional 1,250 shares of its 5 per cent $100 par value preferred stock to be exchanged on a share-for-share basis for Cazenovia's outstanding preferred stock, or, in the alternate, to be sold at par with the proceeds to be used to purchase Cazenovia's preferred stock.

All of the common stock of the Cazenovia company is now held by three persons. Once Midstate acquires at least 95 per cent of Cazenovia's common and preferred stock, Midstate may then petition the commission for permission to merge the two companies.

Midstate serves about 5,100 subscribers through dial offices at Brewerton, Central Square, Manlius, Munnsville and West Winfield. The Cazenovia company serves about 1,700 subscribers in and near Cazenovia.

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In other actions concerning the Midstate company, the commission has accepted tariff amendments filed by New York Telephone Co. and Midstate under which subscribers of Midstate's Brewerton and Central Square exchanges were to be included in the Syracuse Metroplan beginning Dec. 17.

The toll-free calling area of the Brewerton and Central Square subscribers will include not only the Syracuse core area but also the New York Telephone Co. exchanges at Baldwinsville, Cicero, Cleveland, Constantia and Liverpool.

The new basic rates to be charged to the Midstate subscribers involved will be the same as those now in effect in Syracuse and will result in both increases and decreases in monthly charges.

In the aggregate, New York Telephone estimates an annual loss of about $44,000 in revenues as the result of the elimination of tolls between the exchanges involved and Midstate estimates its toll revenue loss at about $26,000, or a net reduction of $70,000 in toll revenues to the two companies.

The extent to which Midstate will be able to offset its toll revenue loss will be determined by the types of service which its present two-party and four-party business subscribers at Brewerton and Central Square elect to take. These two classes of service, presently available at $9.00 and $7.50 monthly, respectively, are not offered under Metroplan tariffs.

In their place, the company will offer flat-rate one-party service at $17 monthly or one-party message rate service at $8.00. The company estimates that its revenue increase from basic rates will increase by from $9,000 to $14,000, thereby holding its aggregate revenue drop to the $12,000-$17,000 range.

Grant Dial Rates in Minn. To Township System

Watertown Township Telephone System on Dec. 11 was given permission by the Minnesota Railroad & Warehouse Commission to raise its rates effective with dial cut-over in April 1962.

The system, which serves 240 stations, is rehabilitating its facilities with the aid of a $90,000 revenue bond issue.

Under old rates the system had a net income of $1,296 which would have given it a 1.43 per cent rate of return on its $90,300 rate base. With new rates, net income will rise to $5,772 and rate of return to 6.39 per cent.

Present and approved rates are as follows:

	Present	*Approved*
Business		
One-party	.....	$6.00
Multi-party	$1.50	4.50
Residence		
One-party	.....	5.00
Four-party	.....	4.00
Multi-party	1.50	3.00

United of Pa. Seeks Raise, Toll Free Service OK

The United Telephone Co. of Pennsylvania, Harrisburg, on Nov. 29 asked the Pennsylvania Public Utility Commission to approve a $2,800 annual increase for its Beach Creek subscribers in connection with toll free service between Beach Creek and the Bell Telephone Co. of Pennsylvania's Lock Haven exchange.

Elimination of the 10-cent toll charge on calls between the two exchanges will save subscribers $7,700 annually.

Lock Haven's 5,237 subscribers would save $3,000; Beach Creek's 523 subscribers would save $4,700.

The proposed changes are to be effective Jan. 25.

Ill. High Court Upholds Raises To Cover Franchise Taxes

The Illinois Supreme Court, according to a Dec. 9 report, has reiterated and amplified its previous ruling, that the burden of franchise payments by utilities to municipalities requiring such payments, must be borne by the communities which derive the benefits of such payments.

This amplified opinion was handed down in the case of the Village of Maywood versus the Illinois Commerce Commission.

The high court's decision was based on its ruling of some years ago in the case of the City of Elmhurst versus Western United Gas & Electric Co.

In this ruling, the court held that franchise payments were properly chargeable as an element of the cost of operation, which should be borne by the company's consumers residing within the municipality which received the annual payment, and held that a rate providing for such payment was not unjust or discriminatory.

The current case began in 1955 when the Northern Illinois Gas Co. asked the Illinois Commerce Commission for increased rates in the villages of Maywood, Bellwood and Melrose Park to reimburse the company for the expense of franchise payments made to these villages. (The raise request for Bellwood and Melrose Park was later dropped.)

Maywood appealed the commision's decision granting the company an increase to the Circuit Court of Cook County. The circuit court upheld the commission's decision. Maywood then appealed directly to the supreme court to review the circuit court's judgment.

CW&T Plans Stock Split, Raises Dividend Payment

The board of directors of California Water & Telephone Co., Monrovia, in a meeting on Dec. 12 increased the quarterly dividend on the company's common stock from 34 to 36 cents per share payable Feb. 1, 1962, to stockholders of record Jan. 2.

The directors also authorized a 2-for-1 split of the common stock subject to approval by the stockholders at a special meeting which will be called for Feb. 14.

If approved by the stockholders and the California Public Utilities Commission, it is anticipated that the split will be made effective on or about Mar. 1, and that dividends on the split stock would be continued at the increased rate—namely, 18 cents per quarter equal on an annual basis to $1.44 per share on the present stock.

Quarterly dividends were also declared on the following classes of pre-

ferred stock, payable Feb. 1 to stockholders of record Jan. 2.

Class of Stock	Amount per Share
Preferred:	
$1.20 dvd. series	30 cents
$1.24 dvd. convertible series	31 cents
$1.25 dividend series	31¼ cents
$1.32 dvd. convertible series	33 cents

OK Sale of Westerly's Conn. Facilities to SNET

The Connecticut Public Utilities Commission on Dec. 15 approved the sale of the "plant, property and assets of Westerly Automatic Telephone Co. located in the state of Connecticut" to the Southern New England Telephone Co.

Westerly operates in Stonington, North Stonington and Voluntown, Connecticut, serving 2,700 subscribers.

All the stock of the Westerly company, which also operates in Rhode Island, is owned by the New England Telephone & Telegraph Co.

"Fitness for Freedom " Theme In Ohio District Meetings

Dr. Floyd Faust, pastor of Broad Street Christian Church, Columbus, O., told over 1,000 members and guests of the Ohio Independent Telephone Association at six district meetings in October and November that one of the most critical needs of Americans today is the instilling of discipline, moral fitness, mental alertness, and personal responsibility among American youth and adults.

During what was termed "one of the meatiest series of district programs ever presented," Dr. Faust hit hard at the need for a stronger America through better Americans. Deploring the tendency of many doting parents to make life too easy for their children, the speaker urged parents to expose their children to experiences which will build stamina and self-dependence.

No thoughtful citizen doubts that we are approaching a moral crisis, even more grave than the political crises one sees in the daily headlines, Dr. Faust said. He warned that Americans must make a bold frontal attack on moral problems; and they must recognize two institutions, the church and the public school. These are the foundations of our American way of life, he told Ohioans, and, therefore, deserving of wholehearted support.

An invitation was extended by the Ohio Association to every management and supervisory person in the state's Independent companies to attend one of the meetings of the series. Attendance captains were appointed in each of the counties of Ohio's six public relations districts. Responsibility for inviting guests to the district meeting on a county level was that of the attendance captain. Invitations to district or state level guests were issued by the district chairman.

During recent district meetings of the Ohio Independent Telephone Association, public relations contacts among community leaders was a subject of considerable interest. Meeting today's critical needs among American youth and adults was topic of Dr. Floyd Faust, pastor of Broad Street Christian Church of Columbus (fourth from left), who posed with this group of Independents. Left to right: Howard M. Wright, president of the Ohio association, and president of The Ashtabula Telephone Co.; Daniel W. DeHayes of Columbus, executive vice president of the Ohio association, and also a speaker; R. Martin Galvin, former secretary of the Public Utilities Commission of Ohio; Dr. Faust; and Robert Bonnar, district chairman for the Ashtabula meeting, and president of The Geneva Telephone Co.

"One of the basic principles of good public relations is keeping in close contact with community leaders. Since our operations must be at the community level, we must never forget that these individuals, in their pride and prejudices, begin their reasoning with their own homes and families and work outward. The nature of the telephone industry has encouraged the formation of an integrated nation-wide system; but we, as telephone people, have learned that such an operation can function in accordance with public opinion only if the public thinks and acts always from the viewpoint of the individual community. It is, therefore, essential that we have local community leaders informed and in agreement with the program and progress of our respective companies," Daniel W. DeHayes, executive vice-president of the Ohio association, said.

Each community across the land has a small group of individuals who, through position or personal prestige, exercise a dominant influence on local life and thought. They are the people to whom others look for leadership and whom they are accustomed to following.

At these district public relations meetings, we were successful in giving many persons in this group a better understanding of Independent telephony; and we made great strides in selling the continuing objectives of our public relations program, Mr. DeHayes observed.

Included in this group were:

(1) County commissioners.

(2) Service directors of municipal corporations.

(3) Editors of daily or weekly newspapers.

(4) Personnel of the Public Utilities Commission of Ohio.

(5) County chairmen of Democratic and Republican parties.

(6) Members of the Ohio Legislature and U. S. Congress.

(7) Chamber of commerce presidents or secretaries.

(8)County prosecutors or city solicitors.

(9) Mayors of incorporated cities or villages.

(10) County farm bureau organization directors or presidents and county grange deputies.

In addition to the above categories of guests at the district meetings, industrial leaders, trade association secretaries, legal counsels of telephone companies, plus heavy toll users were invited by individual association member companies.

During the meetings, Howard M. Wright of The Ashtabula Telephone Co.; G. Thomas Winn of General Telephone Co. of Ohio, Marion; Weldon W. Case of Mid-Continent Telephone Corp., Elyria; Joseph Quatman of Telephone Services, Inc., Lima; Leo Meckstroth of Northwestern Telephone Service Co., Napoleon; and Mr. DeHayes served as industry spokesmen or toastmasters.

News on New Products

EXTRUSION COMPOUND—A new polyethylene extrusion compound, now available from Union Carbide Plastics Co., is said to make one wire extruder do the work of two, because the compound can be extruded so rapidly.

This compound, DFDA-0511, states Union Carbide, has been designed to be extruded at speeds in the order of 4000 ft./min. when extruding thin walls on traditional telephone wire sizes AWG No. 22,24 and 26. The company explains, these are not "speed runs" designed to give only high-rate figures, but ones that yield very smooth, uniform insulations. Also, DFDA-0511 is said to eliminate rough surfaces, caused by melt fracture, without modification of the die or other equipment.

This is a 0.92-density material with a melt index of 0.25. Under standard room temperature tests, DFDA-0511 has a short time electrical test of 550 volts/mil, a dissipation factor of 0.-00026, and a dielectric constant of 2.28.

Tensile strength of DFDA-0511 is 2400 psi.; and it has an elongation of 520 per cent. The brittleness temperature is —100° C.

Also, it is said to exceed the minimum standards established by the telephone industry for singles insulation. Request NP1779.

•

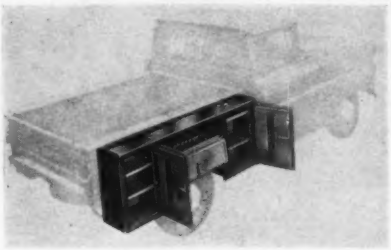
FROZEN SOIL CUTTER—a new machine, called the Pow-R Frost Cutter, which features a large, high-speed revolving cutting wheel, with 20 hard-alloy steel cutting teeth said to penetrate frozen soil to a depth of 28 inches is now available from Vermeer Mfg. Co.

The Pow-R-Frost Cutter has a maximum cutting width of 9 inches and a digging speed up to 10 feet per minute, the company states. It is powered by a 56 hp Wisconsin VR4D engine, and is hydraulically controlled with a Hypoid 90 or 80 hydraulic system.

Mounted on two 7:50 x 15 wheels, the Pow-R Frost Cutter is trailed behind a tractor, pickup or Jeep. Its cutting action leaves the spoil in the ditch where it can easily be removed with a conventional small ditcher. Vermeer states that its frost cutter saves excessive wear on large, expensive ditching equipment. Request NP1780.

•

PICKUP COMPARTMENTS—Utility Body Co.'s new PC series pickup compartments are claimed to add lockable carrying space for tools, parts and equipment with no sacrifice of loading area. Any ½ or ¾-ton pickup can be converted into a service vehicle, Utility Body states, by simply replacing the fenders with the PC compartments.



Two adjustable and removable shelves are in each vertical compartment and an adjustable parts tray is in each right horizontal compartment.

The PC series is fabricated entirely of heavy-gauge steel. The PC series is said to offer full visibility to sides and rear (because of low fender mount position). Additional features are described as including:

Double panelled water-tight doors with rod type hinges rolled into the door hem. Doors are hinged on special grease loaded bearings to prevent binding.

Door handles are flush pull-out type with slam action catches.

Special warning when doors are not securely closed (handle protrudes).

All doors have master keyed cylinder locks.

All edges are ground smooth and exposed parts are ground smooth for safety.

All body surfaces are acid etched to clean and preserve the metal.

Non-flaking primer is used to prevent rust.

Compartments and inside wheel housing are undersealed.

Request NP 1781.

•

CABLE & PIPE BURYING METHOD—A new technique of burying underground cable or pipe is said to remove, in many cases, the necessity of breaking up public streets and digging up private property.

This is made possible, Mite Pipe Ram Co. Inc. says, by the use of "The Mite-Hydraulic Ram", a gasoline driven 5¾ H.P. compressor and 1-5/16 O.D. 30-inch length pilot rod.

The manufacturer describes the method of using the Ram as follows: "A hole is dug every 50 or 100 feet along the site of underground structure to assure accuracy of feeding the pilot rod and to locate existing substructures. The Mite Hydraulic Ram, which is 39 inches long and 17

(Continued on page 38)

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Please have the manufacturer send me without obligation the literature indicated by the following numbers:

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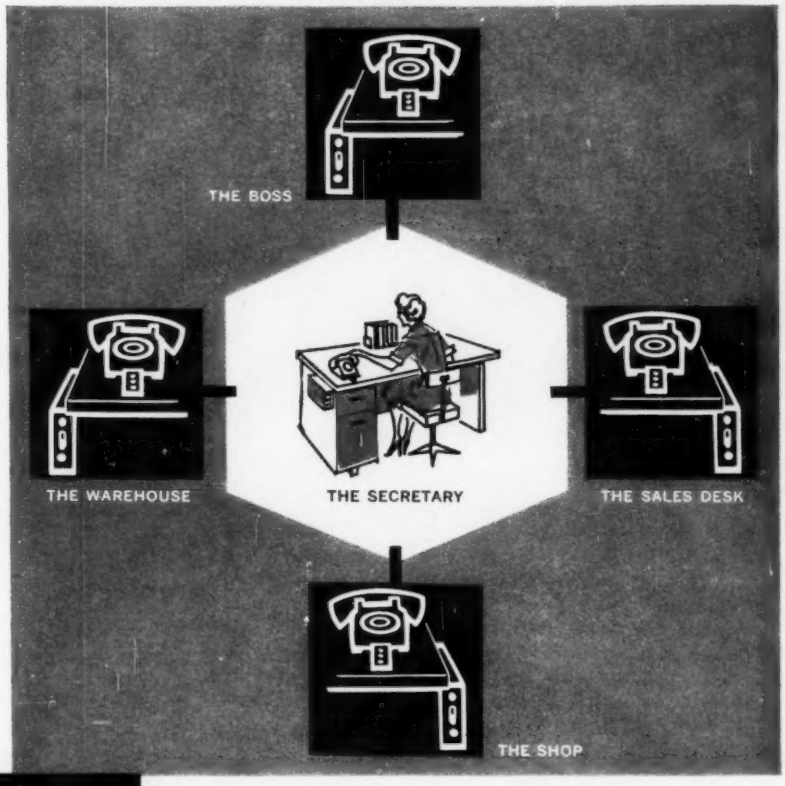

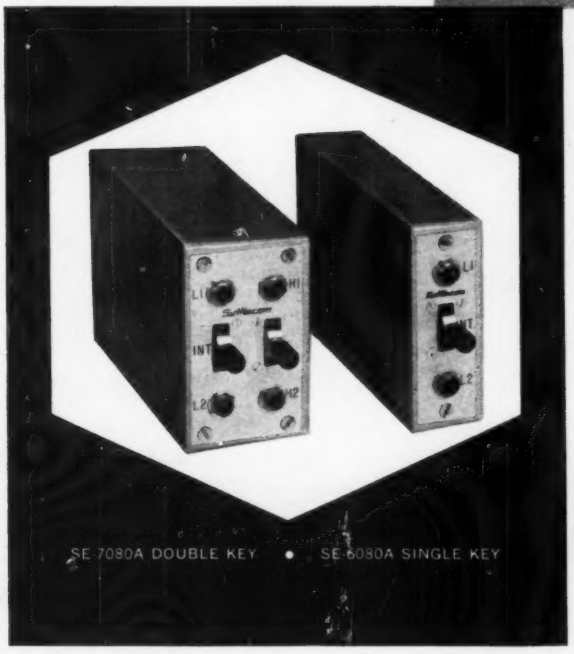

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Total equipment costs for a typical 5 station installation, less telephones, are under $180.00! (Read that again, please!) Write, wire or call Suttle **today** for full literature and prices.

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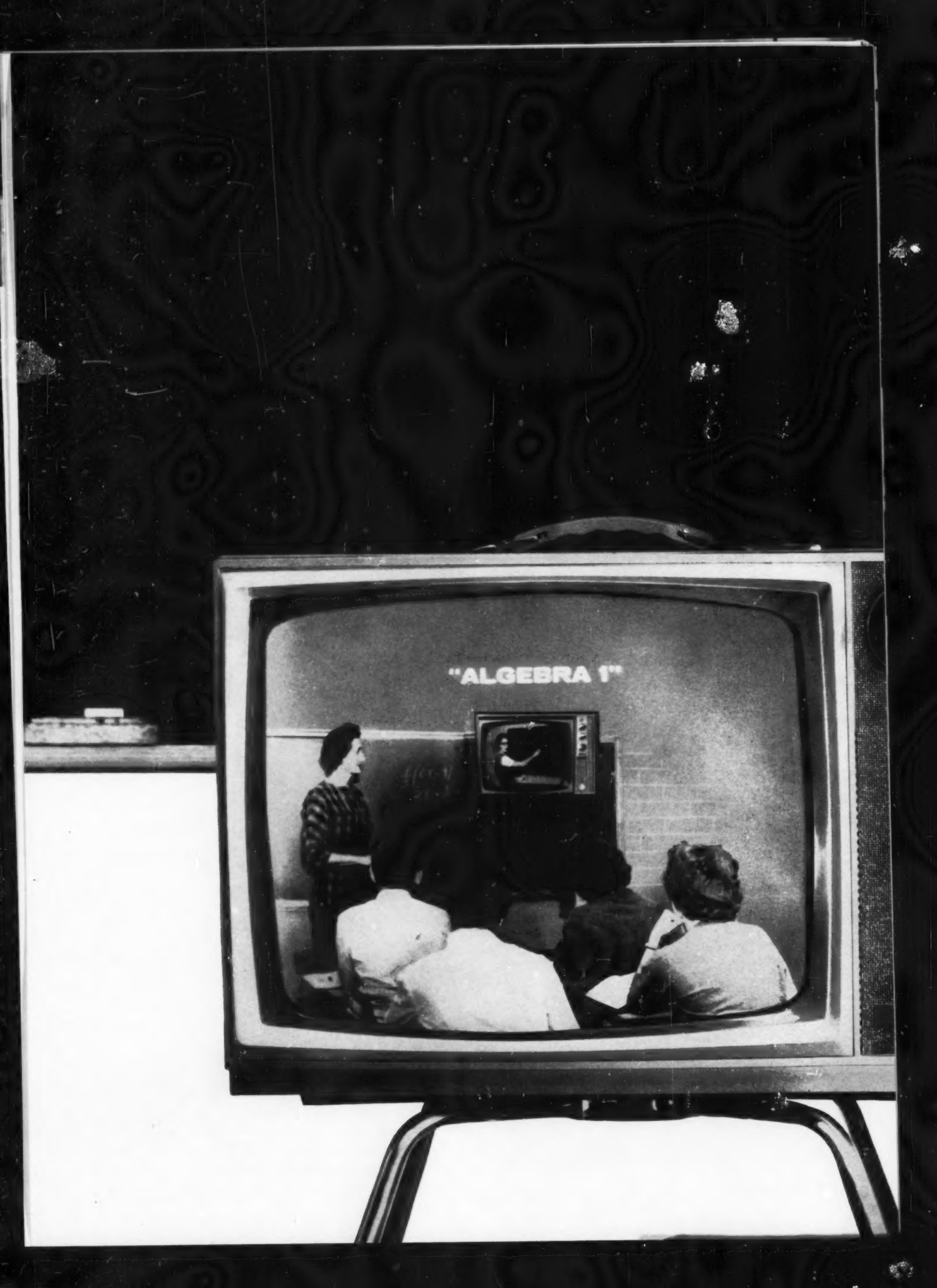
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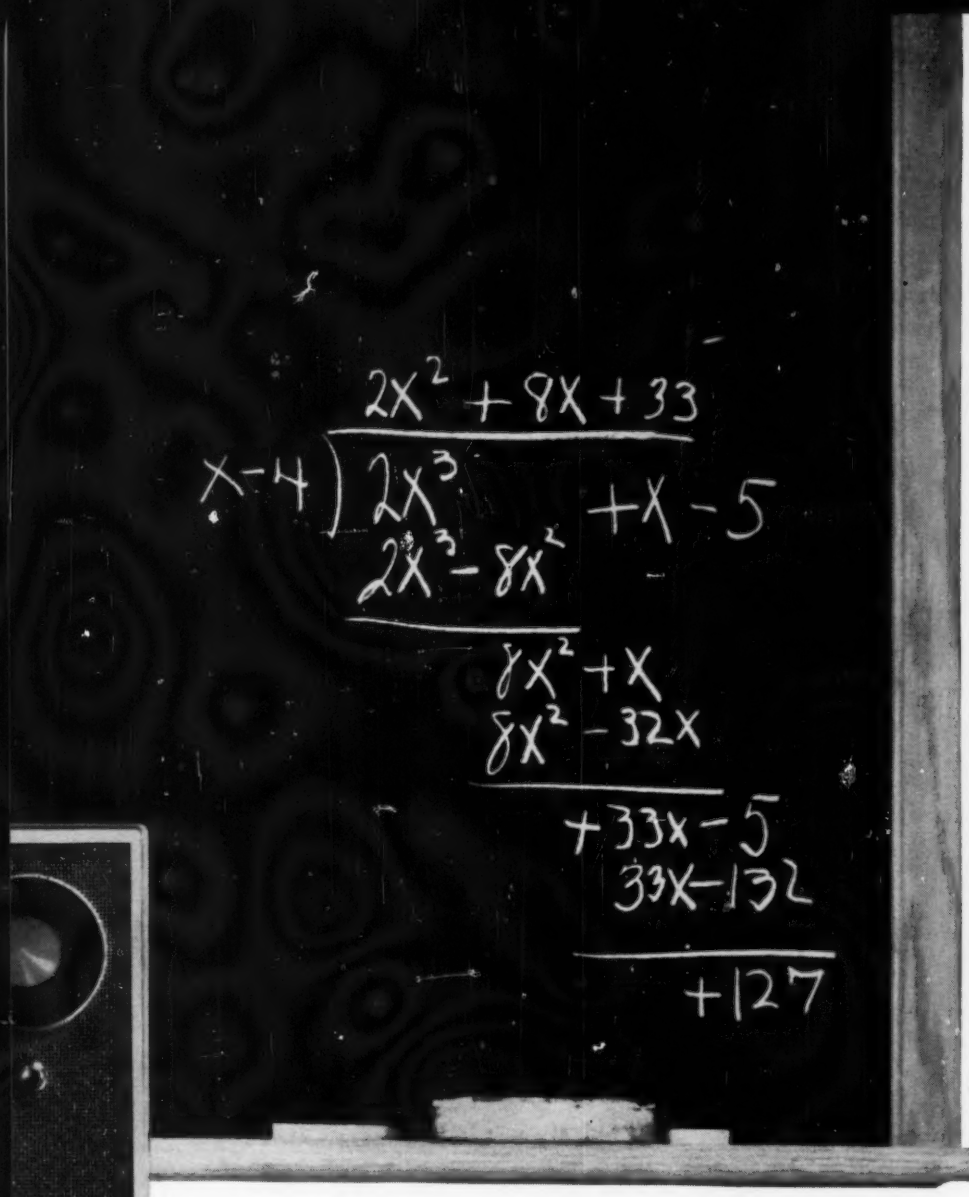


Independents and Southern Bell Pioneer in ETV Network Development

The school bell rings. Roll is taken. The teacher turns on a television set and a class in "Algebra I" begins.

This same scene takes place every school day, in 64 schools in 30 South Carolina communities—the result of America's *first* statewide closed circuit Educational Television network.

A modern miracle in education, it could never have come to pass without close cooperation between Southern Bell and South Carolina's 44 Independent Telephone Companies.

When South Carolina began its ETV project, there was no statewide closed circuit educational network anywhere in the nation. And no cost figures for such a project were available. Southern Bell and the Independent Companies worked closely together to develop the needed cost information for submission to the South Carolina legislature.

When legislative approval had been received, cooperation continued, as Independents and Bell worked with their manufacturers, suppliers and distributors to stockpile needed equipment for delivery on short notice.

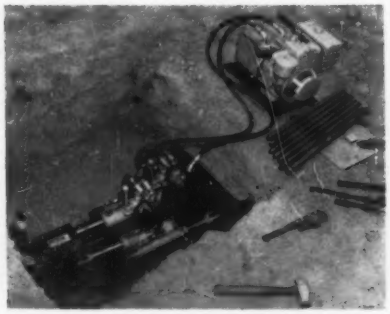
Many more problems were met and solved jointly. Even now, in the day-to-day operations of the ETV network, technical performance is continually reviewed by Southern Bell and Independent Companies in South Carolina.

This is another way in which Independent and Bell System Companies work together throughout America. And it's another reason why our nation enjoys the most efficient and economical communications in the world.

BELL TELEPHONE SYSTEM

inches wide, is placed on the floor of a pit where it is blocked and staked. Also available are the "Mite Hydraulic Jacks" which eliminate the wood blocking. The Ram with its 14 tons of pushing and pulling force then pushes the 30 inch pilot rods along the route that the underground pipe or cable will eventually take. After the pilot rod reaches its destination, the push head is removed from the pilot rod. A bell reducer is attached to the pilot rod and 2, 3, and 4-inch pipe or cable is connected and the Ram is then ready for pulling back through the pilot hole."

One utility company currently is using five complete Mite-Ram units. The average length of the underground runs is from 200 to 900 feet. The size of the return so far has been 3¼ inches in diameter.



The Ram because of its size is also being used successfully, the company reports, for telephone manhole shots.

Savings are possible because of elimination of the need to cut and repave streets, sidewalks and alleys along the entire length of the underground run.

Robert Scheid, president of the Mite-Ram Co. states that present users of the Mite are telephone, water, electric, gas and railroad companies plus contractor equipment rental yards. Request NP1782.

•

DATA EXCHANGE SYSTEM—The ITT Information Systems Division of International Telephone & Telegraph Corp. reports that it has developed the first commercially available system that blends communication and computer technologies to process and switch telegraphic messages and data speeds of up to one million bits per second.

In addition to speed, ITT says a second featured attribute of the system, called the ITT 7300 Automatic Data Exchange System (ADX), is its versatility.

The ADX principle was developed, ITT reports, to fulfill a military requirement for automatic switching, at

extremely high speeds, of a great amount of message traffic varying from 60- and 100-word-per-minute teleprinter traffic, to data channel traffic of thousands of bits per second. To permit exchange of traffic between the channels, differences in speeds and codes had to be reconciled, and provision had to be made for any desired number of priorities of traffic.

These requirements for the military system were met and the knowledge so gained was used to design a commercial system, the ADX, that would provide similar conveniences and versatility.

The requirement of versatility is met by use of computer techniques. The instructions that inform the switching center of where and how to route a received message bearing a specific address are not fixed by point-to-point connections within the equipment as is common in present-day telegraph switching centers. Instead, the instructions are in the form of a stored program.

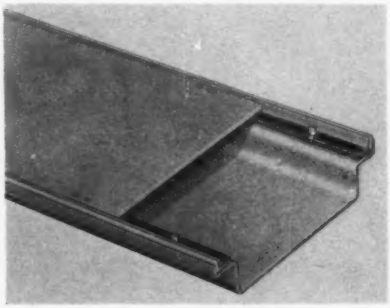
This is said to include the following: A "list" of all possible addresses for received messages; the instructions as to the steps to be taken with regard to messages having each of these addresses; instructions as to priority ranks for special messages; and code- and speed-conversion information. This stored program is read into the machine before traffic is introduced and is stored in the ADX in magnetic memory devices.

By comparing the format of each message with the instructions in the stored program, the machine switches the messages between 200-or-more communication channels, automatically reconciling speeds and codes, storing messages for later transmission when an addressed channel is busy, and interrupting low-priority messages for those of higher priority.

The flexibility of the ADX is possible, ITT states, because by merely reading revisions of the stored program into the machine, its mode of operation can be immediately changed. It is not necessary to rewire or change plugs or patch-cords. The machine does not require close monitoring. Request NP1783.

ELECTRICAL FEEDER SYSTEM—The addition of a new Trench Duct electrical feeder system to its standard Underfloor duct and Headerduct systems has been announced by Wheatland Electric Products Co.

The new trench duct system, designed for installation in the top 2½-inches of floor fill, is said to provide increased capacity for large-size cable feeds needed for modern telephone, inter-com and power facilities in commercial and industrial buildings. It is claimed to be especially suitable for applications utilizing cellular steel floors as raceways for floor distribution. Grommets are provided for premarked access to cells and a side feed for pre-located or field-cut entrance adapts trench duct for use as a feeder system to underfloor ducts.



Trench Duct, made of 14-gauge galvanized steel is hat-shaped with a clear wiring raceway 2½-inches deep and 10 inches wide. Cover plates are ¼-inch galvanized steel. Full ½-inch adjustment range of the entire cover assembly to finish concrete floor height is made by screw driver from top. Adjustment or "hold-down" screws are said to never enter the conductor fill area.

The floor covering trim, which adapts the covers to receive harmonizing floor finishes, is installed with general floor covering. This, according to the manufacturer, prevents construction work damage. When installed around covers, the trim strip is flush with floor surface.

Covers may be removed for access to the trench for changes and additions to the wire fill. When installed, covers over-lap end sections of the trench for ground continuity, in addition to the integral couplings.

Complete installation drawings, detailing the trench duct system and fittings, are furnished to the engineer or contractor as a courtesy service, the company reports. Request NP1784.

Meet the Challenge

The real test of golf, and in life, is not keeping out of the rough. . . but getting out after we are in.

IRVING, TEXAS

Concluded from page 22

each of the 19 areas was given in the latter part of 1961.

A second successful open house was held at the new telephone center on Sept. 10, 1961, to display to visitors the new division office building which had been completed. Other public relations activities are keeping the Southwestern States name and the expansion and improvement program in the eyes of the public.

Thus, the Irving telephone story continues, but now in an atmosphere of better public understanding and more public approval of the telephone company—a case history of how a well-planned, carefully-guided advertising and public relations campaign can pay real dividends.

GREAT NEED TODAY

Concluded from page 14

giving credit and rewards wherever they are due. The success of industry as a whole, and the attainment of national economic objectives, depend on these same factors. Only the scale is different—and much, much larger.

To say this is not to ask for favors. Government must govern, taxes must be levied, laws must be enforced, and justice must be done. Moreover business is just as responsible as government for producing first-rate social as well as economic results. But industry needs the freedom to commit itself, to unleash all its energies, to act with confidence and daring. So I say, let government get *with* private enterprise, heart and soul, and give it the room to drive ahead. I am confident the results will be good for the nation.

I am the more confident when I reflect that the goals of industry, labor, and government are not basically different. What is it that we all want? Economic growth. Wider markets. Rising employment. National prosperity and strength. And all these in freedom, well short of the yoke of wage and price controls—that spectre in the wings, or around the corner, which I have heard Mr. Heller say, with the ring of conviction, that he and his associates in the Council of Economic Advisers detest and abhor.

I repeat: I sincerely believe that government, business, and labor do share the same broad economic goals, and I further believe that with realistic, hard-headed, vigorous action along the lines I have been talking about, we shall prove they are not beyond our abilities to attain.

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NEW BELL TL MICROWAVE

Concluded from page 24

in the radio system. All other active circuit elements are solid-state devices.

The klystrons are maintained at an almost constant temperature over a wide range of conditions by an ingenious vapor cooling system. A small boiler, partially filled with a fluorochemical that boils at 214°F., is in close contact with the klystrons. When their temperature exceeds 214°F., the chemical begins to boil. The vapor flows out into a sealed cooling system where it condenses and flows back into the boiler.

This vapor cooling system is termed so effective over an outdoor temperature range of −40 to 120°F. that no automatic frequency control is necessary in the transmitter.

A total of 27 transistors and 23 wideband ferrite transformers is used in the receiver part of the TL system to provide an over-all IF gain of 110 db. Automatic gain control is provided by a circuit employing special diodes, which attenuate the input signal by an amount depending on an applied dc current. The dc current is controlled by the strength of the signal delivered by the IF amplifier. Two of these circuits, each containing three diodes, are interspersed between three sections of the IF amplifier.

Many components of the TL Microwave system were designed as plug-in units for easy and quick maintenance. The system can be maintained with one portable transistorized test set.

At each TL station, the incoming signal is demodulated to baseband (the range of "carrier" frequencies used to carry telephone conversations over wires). This provides access to all the telephone channels at each station. The baseband signal is then amplified, remodulated onto the microwave signal, and beamed to the next station.

The Bell laboratories explains that normally, one receiver and one transmitter are provided at each repeater station, for each direction of transmission, but where the ultimate in reliability is required, duplicate, or diversity, facilities can be installed. In these cases, a diversity switch is provided which automatically chooses the receiver having the stronger signal at any instant.

The system is monitored by a continuous 2,600 cps tone, which is received at a control terminal, so long as all the units are functioning normally.

Any interruption of this tone automatically sounds an alarm. An attendant then can interrogate each station with a tone unique to that station to find out where the failure is.

A number of different antenna and tower arrangements can be used with the TL system. Although a 5- or 10-foot parabolic antenna can be mounted as a direct radiator (when a low tower is used), the antenna is more commonly mounted at the base of the tower. It then radiates directly upward, and the signal is reflected horizontally toward the next station by a flat metallic reflector at the top of the tower.

This "periscope" arrangement is said to produce less loss than transmitting the signal through long waveguides to a direct-radiating antenna at the top of a tall tower. The reflector size ranges from 6 x 8 feet to 10 x 15 feet, depending on tower height. One antenna is used for both sending and receiving, the incoming and outgoing signals being separated by their difference in frequency and polarization.

The design of the TL system was carried out at the Merrimack Valley location of Bell Laboratories. A research system which demonstrates the principles of the TL system was designed at the Holmdel, N. J., Laboratories, and has been operating for 42 months. Bell credits the rapid development of the present TL system, in only 19 months, to the close cooperation among company research, development and production engineers.

Assembly of the new TL Microwave radio equipment is carried out here at Western Electric's Merrimack Valley Works, North Andover, Mass. Maurice Lynch inspects the TL equipment mounted in relay rack; while (in foreground, left to right) tester, Paul Marquis, and inspection supervisor, Bud Collins, check the wiring diagram.

Minn. Association Reveals Its Convention Attractions

The Minnesota Telephone Association Inc. will hold its 53rd annual convention on Feb. 25 to 28 at the Radisson Hotel in Minneapolis.

Various regulatory officials will be present to participate. The convention will focus on the theme: "The Industry Faces Competition."

Invited to speak on the program are Norman D. Clapp, REA Administrator; L. E. Armfield of Communication Consultants, Fargo, N.D.; Dr. Carl S. Winters, consultant to General Motors and Calvin Dean Johnson, special consultant on public affairs for the American Trucking Association.

Another program highlight will be the appearance of Marilyn Van Derbur, Miss America of several years back, who is currently doing radio and TV work for the Bell System.

Ky. Association Issues Convention Call for 1962

The Kentucky Telephone Association has issued its convention call for 1962 with the announcement of new program features.

Robert Rogosch, secretary, and Arthur Daughters of Covington, president, state that next year, Kentuckians will be meeting at 9:30 a.m. (EST), half an hour earlier than in the past. The convention will meet in Lexington at the Phoenix Hotel, on March 6.

Included in the 1962 program will be operating work shops in the areas of accounting, commercial, plant, and traffic.

Frank Boyd Jr. Named Upstate General's Controller

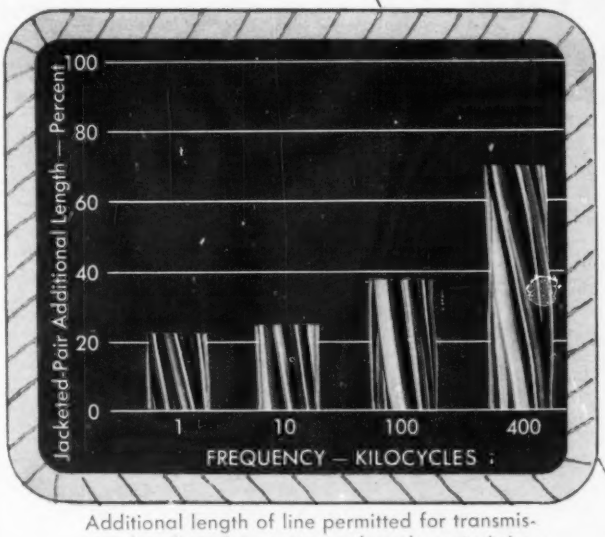
A promotion and transfer for Frank Boyd Jr., General Telephone Co. of Michigan assistant controller, was announced by company president T. A. Saunders. Mr. Boyd became controller of General Telephone Co. of Upstate New York, headquartered at Johnstown, on Dec. 11.

Prior to his Michigan assignment in March, 1957, Mr. Boyd held the post of chief accountant for General Telephone Co. of Ohio. His career started in the accounting department of General Telephone Co. of Pennsylvania in 1945.

Duties of the assistant controller for the Michigan Company will be shared by R. Dale Cronk, formerly special studies supervisor, and C. Edward Sandford, formerly general accounting supervisor. Both have been named assistant controllers.

Mr. Sandford will be responsible for cost accounting, which includes continuing property records, plus plant accounting and general accounting,

now you can have LONGER LINES with WB JACKETED-PAIR DISTRIBUTION WIRE



Additional length of line permitted for transmission loss based on wet weather characteristics. Jacketed-Pair vs Standard Construction (PE-15 March 1960)

Jacketed-pair Distribution Wire exhibits substantially lower loss during heavy rain and will, therefore, allow a longer line for an equal transmission loss. At one kilocycle this improvement permits a 22% longer line.

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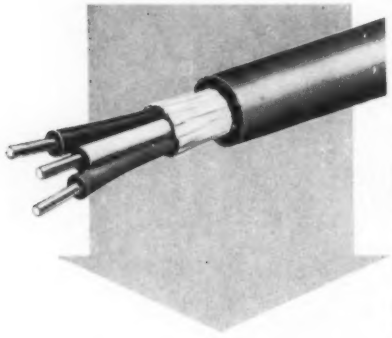

Superior IO wire was designed to lead a triple life. Use it in exposed outside locations; use it for inside positions; use it as a combined inside-outside wire.

Conductor insulation and outer jacket are of rugged, all-weather polyvinyl chloride, which provides excellent resistance to abrasion, oil, alkalies, and most solvents.

Economical and efficient, Superior IO wire is available with 2, 3 and 4 conductors, 22 AWG.

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which includes income and expense statements, payroll, and disbursements.

Mr. Cronk will be responsible for special studies, including toll separation and regulatory reports and taxes.

In addition, he will supervise the accounting department trainee program and the internal auditors group.

TELEPHONE COMPANY IN CIVIL DEFENSE

Concluded from page 19

ings, the system also features the use of stationary, unattended fallout detection devices which automatically feed local radiation information to the Civil Defense control center.

Any reasonable number of fixed fallout detection devices can be built into the system. These units are buried in the ground and are connected to the system by special wires.

By simply pressing a button, the operator can determine if radiation in any of the monitored areas is dangerous or safe. Even if cut off from other sources, the local control center can determine radiation levels in the community at any given time.

Damage Assessment

At any time, the control panel operator can determine, by activating an electronic scanning device, whether any of the system lines are inoperative due to blast or other damage. If the lines are operative, he then can determine if civilians at each outlet are unhurt.

This information can be collected in minutes, depending on the number of outlets tied into the system, and can provide Civil Defense officials with important intelligence as to where survivors are located.

The system is not designed to survive if it is located at or near ground zero in a nuclear explosion. It is designed especially for areas where post-blast fallout would be the greatest hazard.

Can the System be Jammed?

Because the system is connected by wire, it cannot be jammed by an enemy as radio broadcasts can. Since it cannot be monitored by an enemy, the system can provide all available information to civilians without giving aid to an enemy. By using telephone wires, the information goes only to the persons connected to the system. On the other hand, a broadcast, even if it were not jammed by the enemy, would be limited in the type of information it could provide because of the possibility of the enemy gaining intelligence from the broadcast.

Civil Defense authorities who witnessed this first field test of the Teleglobe system stated it was an "unqualified success". Lt. Gen. Francis W. Farrell, state Civil Defense director, termed it "a step in the right direction". He also commended all participants in the test.

General Farrell said eventual approval of the new warning system and equipment will depend on data gathered from questionnaires distributed to Johnstown residents and officials who participated.

It was reported that the New York Civil Defense Commission expects to complete its evaluation of the experimental system in the near future.

Three Executives Receive New West Coast Assignments

Albert L. Cruver of Beaverton, Ore. has been appointed division manager of West Coast Telephone Co.'s Coos Bay division, according to announcement by Lyle E. Cross, West Coast Oregon district manager.

Mr. Cruver has been with the company since 1957, and since 1960, has been in charge of subscriber service in Oregon.

At Coos Bay, he succeeds Vance Weatherton, who is being transferred to the general offices in Everett, Wash., where he will assume responsibilities in West Coast market research.

Filling the post recently held by Mr. Cruver is William G. Moore, formerly a sales supervisor with the General Telephone Co. of California.

Obituary

EDWARD C. WARNER, retired plant superintendent and wire chief of the former Southern Continental Telephone Co. at Cooksville, Tenn., died recently.

Mr. Warner began his telephone career in 1898 as a messenger boy for the old Gainesboro Telephone Co. at its then general office in Sparta, Tenn.

He continued with the company when it moved its general office to Cookeville in 1905, becoming plant superintendent and wire chief in 1914.

In 1930 the Gainesboro company was sold to the old Gary Group. The company under Gary Group operation became known as the Southern Continental Telephone Co. It later became part of the General Telephone System when General purchased the Gary companies.

Mr. Warner remained with the new organization as plant superintendent and wire chief until his retirement in 1944.

General T&E to Own 100% Of Associated T&T

General Telephone & Electronics Corp., which owns 79.1 per cent of Associated Telephone & Telegraph Co., will buy the remaining 20.9 per cent held by Sahara Coal Co., which is controlled by the Woods family of Lincoln, Neb.

The acquisition, approved on Dec. 11 by Sahara Coal directors, will involve issuance of 2,495,950 shares of General Telephone common stock for the 108,519.55 Associated shares held by Sahara. Based on the Dec. 11 closing price of $27.375 for GT&E shares on the New York Stock Exchange, the transaction will involve about 68.3 million dollars.

Associated T&T is a holding company with interests in telephone companies serving British Columbia, the Dominican Republic and Haiti. Its manufacturing units, which include Automatic Electric Co., make and sell telephone equipment in the U.S., Italy, Canada, Venezuela and Belgium.

Elkus Elected Executive V.P. Western Utilities Corp.

Chester H. Loveland, president and chief executive of Western Utilities Corp., San Francisco, Cal., on Dec. 12 announced the election of Charles de Y. Elkus Jr., as executive vice president of the company.

Mr. Elkus has been active in the affairs of the company for many years, and has been a vice president and director since 1952.

He is a partner in the law firm of Bacigalupi, Elkus & Salinger.

Mr. Elkus is also a director of California Water & Telephone Co., Monrovia; The Southwestern States Telephone Co., Brownwood, Tex.; and West Coast Telephone Co., Everett, Wash. Western Utilities Corp. has substantial common stock holdings in each of these companies.

Complete Transatlantic Section Of Commonwealth Cable

The last 500-mile stretch of the transatlantic section of the Commonwealth telephone cable has been laid, it was announced on Nov. 22.

The final splice was made by the British cable-laying ship Monarch 50 miles from Hampden, Newfoundland. The cable is expected to be opened to public service before the end of the year after tests have been completed.

The Monarch sailed from London on Nov. 7. The first 700 mile section of the cable westward from Oban, Scotland, was laid in April.

Cable & Wireless Ltd. and the Canadian Overseas Telecommunications Corp. are jointly responsible for fi-

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nancing, laying and maintaining the transatlantic section of the cable which links Oban with Hampden.

Completion of the section of the 30,000-mile cable project which will link Canada with New Zealand and Australia is scheduled for 1964. Sydney, Australia, and Auckland, New Zealand, will be linked in 1962.

Survey Reveals Teen-Agers Put Telephone 1st On List

Her choice is a telephone. Merchandising and marketing managers of telephone companies will be interested in knowing that a nationwide Christmas gift survey of teen-age girls and boys showed 19 per cent of the girls wanted to own their own telephone.

Next choice was a typewriter, with 11 per cent making this selection; and third in order was jewelry, with 10 per cent favoring this type of gift.

AMA Schedules Preparedness Conference, Industry Speakers

In response to the widespread interest of corporate leaders in action which can be taken to safeguard the nation's productive capacity, and to assure management continuity, in the event of a nuclear attack, the American Management Association has scheduled a Special Industrial Preparedness Conference to be held Jan. 31-Feb. 2, in the Grand Ballroom of the Hotel Astor in New York City.

Top government officials and industrial leaders will cover a broad range of topics, including communications. Speakers will include R. R. Hough, vice president, engineering, American Telephone & Telegraph Co.; and Don G. Mitchell, vice chairman, General Telephone and Electronics Corp.

COMING FEATURE

Series of articles on "routine testing of both C. O. and outside plant facilities," by a Chief Engineer of a leading Independent company.

MUST READING FOR ALL PLANT AND ENGINEERING PERSONNEL

GD/E Management Team Named; Curtis Vice President

Charles F. Horne, new president and general manager of General Dynamics/Electronics, has named the following management team for the division:

Sidney R. Curtis, a veteran of 37 years with General Dynamics/Electronics and its predecessor, Stromberg-Carlson, as vice president for plans and programs.

Dr. Nisson A. Finkelstein, director of research at General Dynamics/Electronics since 1959, as vice president for research and engineering.

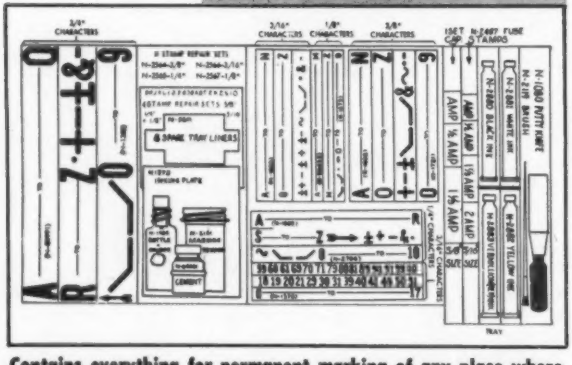
Arthur J. Hatch Jr., in the same position he has held for the past two years, as vice president for commercial products.

Roy W. Jones, former director of manufacturing with 20 years of experience in production in the Telecommunication Division, as director of operations.

Robert D. Gray, with seven years of experience in engineering and program direction, as director of quality control.

Harlon D. Filloon, who has been with General Dynamics divisions on the West Coast in industrial relations po-

Neuses SWITCHBOARD & PANEL NUMBERING AND LETTERING KIT



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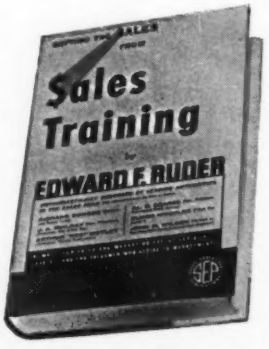
The newest training techniques are given practical application. Included are indoctrination, refresher and by mail training; memory, reading and speech improvement; and training supplements—sales contests, meetings, manuals, house organs, and new recruiting and hiring methods. This new book is enthusiastically endorsed by the top authorities—Arthur Motley, Pres., *Parade Publications;* Al Seares, V.P., Remington Rand; Elmer Wheeler, Consultant; John Wilson, Retired V.P. Sales, National Cash Register; J. McInay, V.P., Marketing, Ray-O-Vac; Richard Borden, Consultant.



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S. R. CURTIS

sitions for 19 years, as director of industrial relations.

Arthur E. Linkins, in the same position as director of contracts to which he was named in early 1960.

Frederick L. Gagnon, with 13 years' experience as electronics engineer, project director and program manager, as program director.

Wayne K. Bright, former controller of the Military Products Division, as controller.

Kenneth R. Harkins, a member of General Dynamics/Electronics' legal staff for the past 18 months, as division counsel.

David S. Cook, with a record of 20 years in advertising, sales promotion and public relations with General Dynamics/Electronics and Stromberg-Carlson, as assistant to the president and general manager.

Robert J. Gilson, former general manager of the Military Products Division, as a special consultant to the president and general manager.

Mr. Curtis, a native of Rochester, has spent his entire business career with the same organization, having joined Stromberg-Carlson while he was still a student at Yale University, from which he was graduated in 1925 with a bachelor's degree in administrative engineering. He became vice president and general manager of the Radio-Television Division when the divisional organization was established in 1949. Following the merger of Stromberg-Carlson into General Dynamics in 1955, he was made a senior vice president of the division. He also is serving as a vice president of the Electronic Industries Association.

Dr. Finkelstein joined General Dynamics/Electronics from the Bausch & Lomb Co., where he had been assistant director of the Scientific Bureau. He is a physics graduate of Harvard University, and has a doctorate

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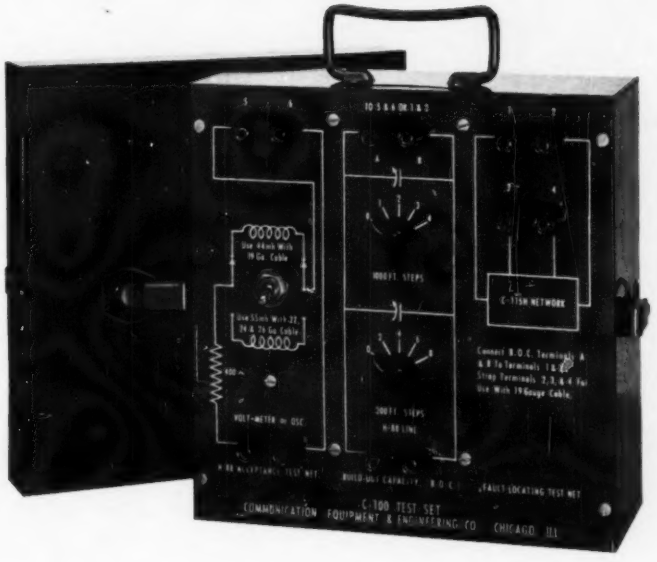

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from the Massachusetts Institute of Technology.

Mr. Hatch has been in charge of the commercial products operations of General Dynamics/Electronics for the past two years, having gone to the company from McKinsey & Co., where he had worked as a management consultant. He is a graduate of Syracuse University with a bachelor's degree cum laude in industrial engineering.

Mr. Jones has been with General Dynamics/Electronics and its predecessor, Stromberg-Carlson, since 1942, when he joined the company as an expediter. Subsequently he worked in the production control department of the Telecommunication Division, became assistant production manager in 1956, and manager of production in 1958.

Mr. Gray joined General Dynamics/Electronics in September, 1961, as director of quality assurance from the Military Products Division. Previously he had been with Sylvania for several years as a project engineer, section head and program director. He has an electrical engineering degree from Oklahoma State University, and served four years in the U.S. Navy during World War II as an aviation chief electronic technician.

Mr. Filloon joined the Consolidated Aircraft Co., in San Diego, predecessor of General Dynamics' Convair Division, in 1942, and later became division wage and salary supervisor. In March, 1951, he was named manager of industrial relations and security for the newly-formed "Guided Missile Division," which subsequently became the Pomona Division, at Pomona, Cal. Last month his title was changed to director of industrial relations.

Prior to joining General Dynamics/Electronics, Mr. Linkins had been manager of contracts for the Crosley Division of Avco Corp. for eight years. Earlier he had been a contracts officer in the U.S. Air Force Procurement Office in Cincinnati, and an instructor in accounting and law at the University of Cincinnati. He has degrees in accounting and law from the University of Cincinnati.

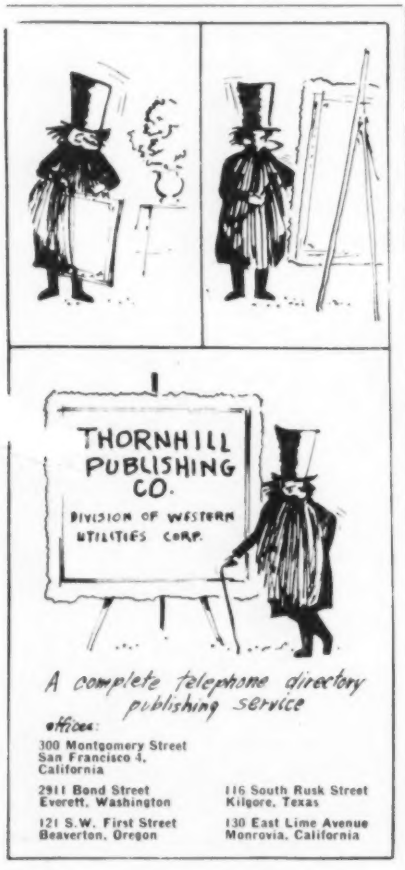
Mr. Gagnon joined General Dynamics/Electronics in 1960 as chief of systems design and analysis. Previously he had been an engineer with the U.S. Army Signal Corps laboratories at White Sands, N.M., a department manager with Litton Industries, and technical director with Hoffman Laboratories. He is an electrical engineering graduate of the University of California.

Mr. Bright joined General Dynamics/Electronics in 1953 as a systems and procedures analyst, later becoming manager of general accounting, and then assistant controller. He attended Lancaster Business College and the University of Miami, Fla., and served in the U.S. Air Force during World War II and the Korean War, attaining the rank of major.

Before going to General Dynamics/Electronics in 1960, Mr. Harkins was for five years co-counsel of the anti-trust subcommittee of the Committee on the judiciary of the House of Representatives. Earlier he served as a trial attorney in the Anti-trust Division of the Department of Justice. He has degrees in economics and law from Ohio State University, and during World War II served as an artillery officer with the 14th Armored Division.

Mr. Cook joined General Dynamics/Electronics' predecessor, Stromberg-Carlson, in 1942 as editor of the employes' magazine, after 16 years in the entertainment management business. Subsequently he became advertising manager of the Radio-Television Division, and associate director of public relations. He is a graduate of Cornell University.

Mr. Gilson has been with General Dynamics/Electronics for two years as director of systems management and later as manager of the Military Products Division. Previously he was a program director of Hoffman Electronics Corp., and earlier had been with Litton Industries, and the Sylvania Electronic Defense Laboratory. He is an electrical engineering graduate of Montana State College, and has a master's degree in engineering administration from the University of California. During World War II he served as a radio officer in the Maritime Service.



Copperweld Names Western Sales Head; District Salesman

A. B. Leach has been promoted to Western sales manager, according to an announcement made by George Hamburger, manager of sales of Copperweld Steel Co.'s Wire and Cable Division.

A. B. LEACH

G. D. SEWICK

Mr. Leach was formerly district manager in San Francisco. He will continue to make his headquarters in that city.

A native of St. Louis, Mo., Mr. Leach attended Purdue University where he studied electrical engineering.

He joined Copperweld Steel Co. in 1938 as a sales representative covering a number of Midwestern states. In 1954 he was transferred to San Fran-

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Cascade Pole Co., P.O. Box 743, Tacoma, Wash.—Creosoted Douglas Fir and Cedar Poles.

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Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

International Creosoting and Construction Co., Galveston, Texas—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Wood Preserving Division—926 Grand Avenue, Kansas City, Missouri—"LONG-BELL" pressure-treated Southern Pine and Douglas Fir Poles—Creosote or Penta.

Piedmont Wood Preserving Company—Creosoted and Creosote-Penta Treated Pine Poles. Plant Augusta, Georgia. Yards, Virginia, West Virginia and Connecticut. Address inquiries to Box 1662, Spartanburg, S. C.

Texas Creosoting Company—512 Main Street, Orange, Texas—Creosoted Southern Yellow Pine and Douglas Fir Poles. Can also treat with "Penta."

cisco as district manager and covered California, Nevada, Utah and Arizona.

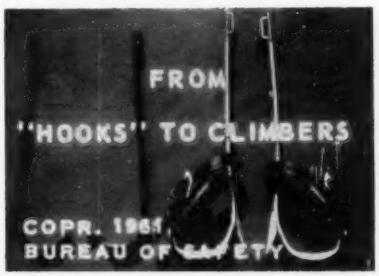
In his new position, Mr. Leach will supervise sales activities in all the Rocky Mountain states, the Pacific Coast area and Alaska.

Mr. Hamburger also announced that a new sales district will be created for the states of Colorado, Utah, Arizona, New Mexico and the southern part of Wyoming. This district will be handled by G. D. Sewick who will headquarter in Denver. Mr. Sewick formerly covered several Midwestern states for Copperweld.

Mathias Klein & Sons Offers Sound Slide Film on Climbers

Produced jointly by Mathias Klein & Sons and the Bureau of Safety in Chicago, Ill. is a sound slide film in color titled, "From Hooks to Climbers", which is now available to interested groups.

The film runs 22 minutes. It covers the history of climbers, tells how they are manufactured and used. It also gives tips on the care of climbers and shows proper sharpening and climbing techniques.



Title frame of new sound slide film made available by Mathias Klein & Sons.

Film and transcription may be either purchased or borrowed, without charge. To purchase "From Hooks to Climbers", contact the Bureau of Safety, 20 N. Wacker Drive, Chicago, Ill. For borrowing, those interested should contact Mathias Klein & Sons, Inc., 7200 McCormick Road, Chicago 45, Ill.

Schmidt Named Vice President Mfg., Holtzer-Cabot Corp.

Leonard C. Schmidt has been appointed to the new position of vice-president, manufacturing at Holtzer-Cabot Corp., manufacturer of instrument motors, gear motors and other rotating electromechanical devices.

Mr. Schmidt went to Holtzer-Cabot from Itek Corp., where he was director of manufacturing. He earlier held production posts at Worcester Pressed Steel Co. and General Electric.

He is a member of the American Society for Metals and the Society of Professional Engineers. He is a native of Philadelphia, Pa.

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Requires thorough background in design of large central office, manual and dial equipment. Send resume to I. F. Markham, National Scientific Labs, Inc., 2010 Massachusetts Ave., N.W., Washington 6, D. C.

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